IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF PENNSYLVANIA CIVIL ACTION NO. 96CV-5903

STEVEN R. ARCH, :WILLIAM BARNES, CLARAN :
McNALLY, CATHERINE POTTS, :NORMA RODWELLER, :
BARBARA SALZMAN, :EDWARD J. SLIVAK, and :
JOHN TEAGLE, : :
Plaintiffs, : : Deposition of:
v. : JOHN ROBINSON, PH.D.
: VOLUME I
THE AMERICAN TOBACCO COMPANY, :INC., et al., :
Defendants. :

TRANSCRIPT of testimony as taken by and before JANE WORTHEN SMITH, a Certified Shorthand Reporter and Notary Public of the State of North Carolina, at the offices of Womble, Carlyle, Sandridge & Rice, 200 West Second Street, Winston-Salem, North Carolina on Tuesday, July 1, 1997, commencing at 9:30 in the forenoon.

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I N D E X

WITNESS	DIRECT	CROSS	REDIRECT
John Robinson			
By Mr. Maistros	4		
By Mr. Sheller	149		
By Mr. Maistros	183		

Confidential Portions Under Separate Cover:
Pages 98 - 101
Pages 172 - 173

P R O C E E D I N G S

VIDEOGRAPHER: We're going on the record. The time is 9:40 a.m. This is the videotaped deposition of John Robinson, Ph.D., taken by the Plaintiff in the matter of Steven R. Arch, et al, Plaintiff versus The American Tobacco Company, Incorporated, et al, Defendant, Case Number Civil Action 96-CV-5903.

This deposition is being held at the offices of Womble, Carlyle, Sandridge and Rice, 200 West Second Street, Winston-Salem, North Carolina on Tuesday, July the 1st, 1997.

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My name is John Girdler. I'm the video specialist, and the court reporter is Jane Smith.

Counsel will now state their appearances for the record, and the court reporter will swear in the witness.

MR. MAISTROS: Jack Maistros, Cleveland, Ohio.

MR. SHELLER: Stephen Sheller, Philadelphia, Pennsylvania.

MS. McDOLE: Sydney McDole, Dallas, Texas.

MS. FEE: Denise Fee, Washington, D.C.

JOHN ROBINSON, Ph.D.,

Having been first duly sworn, was examined and testifies as follows:

EXAMINATION BY COUNSEL FOR PLAINTIFFS

BY MR. MAISTROS:

Q. Good morning, Mr. Robinson, how are you?

A. Good morning.

Q. Could you please state your full name?

A. John H. -- Howard -- Robinson.

Q. And what is your date of birth, Mr. Robinson?

A. 10-31-48, October 31st.

Q. As I said, my name is Jack Maistros. I represent the Plaintiffs in this action.

I'm going to be asking you a series of questions this morning, probably this afternoon as well. If you want to take a break, let your counsel know. If you have a question, let me know. If you don't understand my questions, let me know, okay?

A. Yes.

Q. Have you done this before?

A. I've been deposed before, yes.

Q. How many times?

A. Twice.

Q. Do you know what matters you were deposed in?

A. One was the Keuper case with -- I think it was spelled K-E-U. I say Keuper. The other was Burton.

Q. And who took your deposition in the Keuper case, do you remember?

A. Bruce Cook.

Q. And how about in the Burton case?

A. I don't remember his name.

Q. Do you remember what years those were?

A. Burton was in 1996, I think, early '96, I believe. Keuper, I think, was in about '91 or '92, not exactly sure.

Q. Have you read either of those depositions?

A. Have I read those depositions?

Q. Yes.

A. I read them when they -- when I had to sign to verify that they were accurate.

Q. Have you read them since then?

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A. I read the Keuper deposition prior to Burton. I have not read either since then.
Q. Have you testified in court before?
A. In a small claims action, I represented the company. I have not testified in a courtroom proceeding other than that, small claims.
Q. The small claims action, did that involve any allegation against tobacco per se?
A. A woman was trying to recover damages for illness.
Q. Where was that?
A. It was a small town outside of Sacramento, California, Oak Grove or Cedar Grove or something along that lines. I don't remember exactly.
Q. When was this?
A. Month or two ago. Not very long ago.
Q. Do you know how long the trial was?
A. It was just a few minutes, half hour maybe.
Q. What was her theory of recovery?
A. That she was sick and cigarettes had caused her illness.
Q. She lost?
A. Yes, I believe the judge found in our favor.
Q. Who else testified, do you know?
A. I was there with Mr. Norman.
Q. Who is Mr. Norman?
A. He is an R&D employee, Alan Norman.
Q. Did you testify as a fact witness or an expert witness?
A. I was there to answer any questions that might come up regarding the issues of nicotine and addiction. I really didn't say anything except my name into the record. The judge did not have any questions for me.
Q. Did the judge ask any questions of Mr. Norman?
A. Not that I recall specifically. He may have -- he asked us our names. He didn't even ask us what our positions were. We went and Alan essentially stated what we thought our points were. I don't remember if he asked him any specific questions.
Q. Do you recall that Alan stated what your points were?
A. There were some legal precedents I think in California was the main point. There was a Statute of Limitations. There was -- I don't remember the proper legal terminology for it. There were findings, previous findings that this case would not be allowed under California law.
Q. And did you go out there with attorneys for RJR?
A. We met a local counsel in Sacramento, and we met an attorney from Cleveland in Sacramento. They were in the courtroom. They did not participate in the hearing.
Q. Who did you meet from Cleveland?
A. Mr. Koethe.
Q. Jones Day?
A. Yes.
Q. Did you provide your attorneys any documentation or reports?

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A. I don't believe we did. I think afterwards I may have provided Mr. Koethe with some of my reprints. And he may have had some before, but I don't recall.

Q. Reprints of what?

A. Articles that I had published in the area, manuscripts.

Q. Did RJR present any briefs to the court?

A. We sent a letter. I don't know what a brief is. We sent a letter outlining our position, and we gave them a little booklet outlining our position.

Q. How many lawyers did RJR have?

A. Just Mr. -- well, RJR did not have any. I don't believe the other attorney, and I don't remember his name, I believe he was Jones Day also. But there were two Jones Day attorneys in the courtroom.

Q. And was there a local counsel in the courtroom?

A. One of the Jones Day I think was from San Francisco.

Q. I see. Was the plaintiff represented by a lawyer?

A. No. I don't think we were represented. They did not participate. They attended.

Q. So the only one who did any speaking per se on behalf of RJR was Mr. Norman?

A. That's correct. All I said was my name.

Q. Have you ever been a plaintiff or a defendant in a lawsuit?

A. No.

Q. Have you provided to anyone any statements related to any lawsuit against RJR?

A. I've been deposed before.

Q. Other than that?

A. Have I provided statements? No.

Q. Has anyone interviewed you?

A. No. I've been interviewed by newspaper reporters, by television reporters, by people in the media but not by any attorneys other than at the depositions.

Q. What were the circumstances you were interviewed by the media?

A. They were doing stories on nicotine. May have seen the "Day One" episode. They interviewed myself and Dr. deBethizy on that. Local newspaper did a story once on my work, actually twice on my work.

Q. Which paper?

A. Winston-Salem Journal.

Q. When you say "your work," what was the topic of the article?

A. I don't remember the title. The one centered around my work as -- my research on the areas of smoking behavior and my positions on nicotine and addiction. The other was related to my position as adjunct associate professor of physiology at the Bowman Gray School of Medicine and the research we do there on human performance testing. That lab has also been on CNN.

Q. In what respect?

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A. A reporter was doing a story on research at Bowman Gray School of Medicine and research that had researchers from tobacco companies involved in it or funding from tobacco.

Q. What did you do to prepare for your deposition today?

A. Basically I went back and reread the testimony -- I don't know if "testimony" maybe is the wrong word -- the presentations made at the FDA Drug Abuse Advisory Committee in 1994 by those speaking on behalf of the tobacco industry.

I also last night skimmed through the comments or the submission that the tobacco companies had made to the FDA regarding its comments on regulation. I don't know what the proper title of that is. It was a submission to commentaries on the FDA's proposals to regulate.

Yesterday I met with Ms. McDole and Ms. Fee for about three hours.

Q. Did you review any documents other than the statements you just testified about?

A. Those two statements. No, the only document they showed me was the notice to be here today.

Q. You didn't review any of your prior papers or publications or research reports?

A. No, not in preparation, no.

Q. Did you talk to any people that had been deposed in the last year concerning their testimony?

A. I had run into several people who participated in these depositions, asked them how it went. Dr. deBethizy, Dr. Pritchard, Dr. Gentry I think were the three I asked.

Q. And what did Dr. Pritchard say?

A. I think the feeling of most all the people is they're not sure. They said they thought it went okay and they really don't know.

Q. Did Dr. Pritchard mention anything specifically that he wished he had handled differently in his deposition?

A. No, I don't think so. Conversation was only couple of minutes.

Q. Did Dr. Lipiello tell you anything specifically about his deposition?

A. I haven't spoken to Pat about his deposition.

Q. How about Dr. Simmons?

A. I haven't spoken to Sam.

Q. And deBethizy, what did he say?

A. He said he thought it went okay. He wasn't sure either. He said, I think like all of us, there are things you think of afterwards, maybe wish you had said but he didn't say anything specific.

Q. Did they tell you any of the areas of inquiry?

A. The only specific really comment was from Al who said he was asked about the article of the role of nicotine and tobacco use.

Q. You contributed to that article?

A. Yes, I'm the senior author on that.

Q. Did you bring any documents to the

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deposition today?
A. No, I did not.
Q. Did you see the document request that was attached to the notice to be here?
A. No. I was shown -- I looked at the first page of the Notice and just looked at the time and the place.
Q. You were not asked to look for any documents before your deposition?
A. Not specifically, no.
Q. Do you have any documents at home related to your work at RJR?
A. Nothing that I know of, nothing that would be -- would not be in the office. Might have a copy of something but it would also be in the office.
Q. Are you computer literate?
A. Reasonably so, yes.
Q. Is a lot of your work on your computer?
A. Yes.
Q. Do you have an index of the items on your computer?
A. Do I have an index? No. You know, when you log on you can find files. Do it that way.
Q. Do you have your past papers, for example, on your computer?
A. There may be -- most likely what's on the computer would be presentation slides as opposed to papers. There may be an old paper on the computer. Typically once it's published and archived, it's not necessary to keep it there.
Q. Do you keep any summaries on your computer of what you do at RJR?
A. There are -- closest thing to summaries would be year-end performance reports, what projects had been worked on during the year. That's usually prepared and passed along to management.
Q. And those are performance reports of yourself or others?
A. They would be both, those who report to me -- there would be performance reviews of those who report to me that I would prepare, and there would also be summaries of what I've done that I pass along to my superiors so they could prepare my performance reviews.
Q. In addition to statements you might have provided, did you actually appear live before the FDA or just provide statements?
A. No, I gave a live presentation at the Drug Abuse Advisory Committee. It wasn't at the FDA. It was a panel discussion put together by the FDA. Was at a hotel in, I think it was, Silver Springs.
Q. What year was that?
A. August 2, 1994.
Q. Have you ever read a transcript of that presentation?
A. Yes, I went over that last night. That was one.
Q. That was the one you were referring to?

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A. That was one of the ones, too, I referred to. I should say I did not go over the entire transcript last night. I just went over the parts, the three presentations from the tobacco representatives.

Q. Who else made presentations at that particular hearing, do you know?

A. The three I went over or across the board?

Q. How about the first of the three you went over.

A. The three I went over were myself, Dr. Ciralo, and Dr. Bozarth.

Q. Are those latter two both at RJR?

A. No, they are -- Dr. Ciralo I think is at either Tufts or Boston University. He may have moved. I think he used to be at Tufts at that time.

Dr. Bozarth, I believe, was at University of Rochester, but I'm not positive about that.

Q. And other tobacco companies also made presentations?

A. Those were the only three that I'm aware of.

Q. Who was Ciralo speaking on behalf of?

A. It was listed in the program on behalf of the Tobacco Institute. I think, although my impression was they gave the tobacco industry a block of time, I did not speak to anyone from the Tobacco Institute about speaking there.

Q. Was the Tobacco Institute considered part of the tobacco industry at the presentation?

A. I think it was certainly announced that the three of us were speaking on behalf of the Tobacco Institute. That's how it was presented.

Q. The Tobacco Institute or the tobacco industry?

A. They said "Institute" and I felt I was representing my company as part of the tobacco industry.

Q. How about Bozarth, who was he representing?

A. All three were lumped in the same session.

Q. Are you a member of the Tobacco Institute?

A. Personally, no. My understanding is my company participates in that.

Q. Do you attend meetings with the Tobacco Institute?

A. No.

Q. Is there somebody at your company that is primarily in charge with interfacing with the Tobacco Institute?

A. I don't know.

Q. What is the Tobacco Institute?

A. My understanding is it's a lobbying organization.

Q. And what is that understanding based on?

A. That's what I've read in the newspapers.

Q. Have you given any statements or

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testimony to anyone at the Justice Department?
A. No. Not unless they were present at one of those depositions.
Q. Do you know of anyone at RJR that has been interviewed by anyone at the Justice Department?
A. Currently at RJR, no.
Q. How about formerly?
A. I believe Dr. Gilbert was interviewed at one time.
Q. What did that concern?
A. He just told me they wanted to talk to him about his research.
Q. And when was that?
A. Several years ago.
Q. Is this the Gilbert that has done nicotine studies with you and Pritchard in the past?
A. He's done smoking behavior studies, yes.
Q. Did he tell you anything they asked him?
A. Not that I remember. Only that, I mean, other than they just asked him about the work he had done.
Q. And did he provide statements to the Justice Department?
A. I don't know. He said he was interviewed. I don't know.
Q. You don't know if he testified or?
A. I don't know if it was under oath, if it was just informal chat.
Q. Do you know if he took the Fifth to any questions?
A. No, I don't know that.
Q. Do you know if any other investigative agencies have interviewed anyone else at RJR in the last couple of years?
A. Not that I'm aware of.
Q. How about the FTC? Have you given any statements to the FTC?
A. Well, I'm sorry. Let me go back. Of course, there were the Congressional hearings that I saw, but I don't know if that qualifies --
Q. Did you participate?
A. -- for the question.
Q. Did you participate in that process in any fashion, the Congressional hearings?
A. I helped prepare the submission, the written submission. I should say parts of it.
Q. Do you know what parts you helped prepare?
A. I submitted or prepared part of the document that dealt with comments on nicotine and addiction and smoking and addiction.
Q. Who was in charge of those parts of that presentation?
A. Who was in charge of the --
Q. At RJR?
A. Mr. Johnston made that presentation at the --
Q. I know he made it, but who was in charge of putting that together?
A. Oh, I don't know.

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Q. Who asked you to contribute to it?
A. I guess it probably would have been -- I don't remember exactly. I would only guess probably Dr. deBethizy, either Dr. deBethizy or Dr. Ehmann, but I don't remember who.
Q. What were you specifically told when you were asked to help contribute to that document?
A. I was asked to, I think, summarize my -- well, since I don't remember who asked me, I don't remember the exact assignment. I summarized the essentially points we've published in the literature, particularly summarized the role of nicotine and tobacco use.
Q. Did you review also research that had not been published?
A. For that?
Q. For that document?
A. Not that I remember, no.
Q. Did anyone edit the portion that you did?
A. I expect I would submit my comments, and I expected it would get edited.
Q. Do you have a draft of your comments that was submitted before they were edited?
A. Not that I'm aware of. Might be something on the computer, but I don't think so.
Q. You didn't keep a hard copy of your comments that were submitted to Congress?
A. I have the final document. I mean -- well, I don't know that I have the final document. I'm sure that someone has the final document.
Q. Could you look on your computer between now and tomorrow to see if you have a draft of the version before it was edited?
A. That would depend what time we finish up, I think.
Q. We'll finish at a reasonable time today. I don't think anyone wants to go until midnight. But if you have time tonight or tomorrow before we start, I'd ask you to look and see if you have a printout version of your original comments that were submitted to Congress.
A. Okay.
MS. McDOLE: Wait a minute. Are we talking about -- you said Dr. Robinson's original comments submitted to Congress?
MR. MAISTROS: Eventually a document was submitted to Congress from RJR. It was a statement, was it not, on tobacco and addiction?
THE WITNESS: There was a submission, a statement, on the company's position on those hearings.
BY MR. MAISTROS:
Q. Right, and you drafted a portion of that report and gave it to somebody?
A. I drafted a portion of that report.
Q. I would like the portion that you drafted if you have it still on computer or hard copy. And I'm not talking about the final version

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that ended up where you can say, this was my part. I'm talking about some piece of paper, if you have it, that says, here's my contribution to the report, okay?

What's your current address?

A. I live at [DELETE].

Q. I'm sorry, the street?

A. [DELETE].

Q. And where?

A. [DELETE].

Q. And are you married?

A. Yes, I am.

Q. How long have you been married?

A. Ten plus years, ten and a half years.

Q. First marriage?

MS. McDOLE: Dr. Robinson, if you don't want to get into some of this, you don't have to. It's up to you.

THE WITNESS: Not sure I see the relevance of that.

MR. MAISTROS: Background to gauge credibility, character. Going to be testifying in front of a jury some day, either by videotape or live, and I'm not going to get very specific. I just want to know some general information.

Q. Have you been married before?

MS. McDOLE: You don't have to answer that question, Doctor.

MR. MAISTROS: Are you instructing the witness not to answer?

MS. McDOLE: You don't have to answer the question.

MR. MAISTROS: Are you instructing this witness not to answer?

MS. McDOLE: I'm telling him he does not have to answer that question.

MR. MAISTROS: So you're instructing the witness not to answer?

MS. McDOLE: The statement is on the record.

THE WITNESS: I will -- I don't mind answering that question. I will, if I feel the question is too personal, not answer that. This is my first marriage.

BY MR. MAISTROS:

Q. Do you have any children?

A. Two children.

Q. What are their names and ages?

MS. McDOLE: Same thing, Dr. Robinson. If you don't want to get into it, you don't have to.

THE WITNESS: I don't have a problem with that. Andy is seven, Adam is six.

BY MR. MAISTROS:

Q. And does your wife work?

A. Yes.

Q. What does she do?

A. She works at U.S. Air, U.S. Airways. She is an acting director of marketing applications, I believe it is.

Q. Did she ever work at RJR?

A. No.

Q. Were you ever in the military?

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A. No.
Q. Where did you attend high school?
A. Went to Notre Dame High School in West Haven, Connecticut.
Q. Did you graduate?
A. Yes.
Q. What year?
A. 1966.
Q. Did you attend college?
A. Yes, I went to Providence College.
Q. What years?
A. 1966 through 1970.
Q. Did you go to graduate school?
A. Yes, I did.
Q. What years?
A. 1970, State University of New York at Stonybrook. I left in 1976 to do my post doctoral fellowship.
Q. Did you get a degree from Stonybrook?
A. Yes.
Q. What degree?
A. Ph.D.
Q. In '76?
A. '78. Took my post-doc and finished up while I finished up my dissertation and some other paperwork.
Q. Did you work while you were at Providence?
A. Did I work?
Q. Yes.
A. I was -- I had a couple of semesters, was a prefect in the dorms.
Q. I'm sorry, what is that?
A. Prefect, floor leader, keep the riots down on the floors.
Q. So you were a campus employee or university employee?
A. I don't know, I guess. I got a small paycheck for that.
Q. How about during '70 to '76, were you employed?
A. I had research fellowships, research teaching assistantships.
Q. Where?
A. At Stonybrook, graduate assistantships, those kinds of --
Q. Did you have any other degrees?
A. Just BA and a Ph.D.
Q. Do you hold any licenses of any sort other than a driver's license?
A. Pilot license. That's all. Radio operator's license. Nothing of a professional nature.
Q. Other than your teaching fellowships, have you taught full time anywhere?
A. Full time, no.
Q. Part time?
A. Just as those teachings assistantships were typically part time, class here, class there.
Q. What did you do in 1978?
A. 1978 I left -- in 1976 I did my post-doc at College of Physicians and Surgeons of Columbia

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University, Department of Pharmacology. Left Columbia in 1978 to come to the Department of Physiology and Pharmacology of Bowman Gray School of Medicine, Wake Forest University here in Winston-Salem where I was a research associate. And I still hold an adjunct associate professorship there.

Q. What was your first title at Bowman Gray?

A. I believe it was research associate.

Q. Who hired you?

A. Dr. Sam Deadwyler.

Q. How long did you hold that title?

A. About two and a half years. Closer to three years I was there.

Q. So '81?

A. '81.

Q. Then what happened?

A. I left and came to Reynolds in June of 1981.

Q. What type of research did you do at Bowman Gray in '78 to '81?

A. Was principally electro-physiological research looking at the effects of compounds on brain slices of rats trying to determine their mechanisms of action.

Q. What kind of compounds?

A. The grant was principally to look at opiates, morphine.

Q. Who provided the grant?

A. The grant was to Dr. Deadwyler. I don't know if it was an NIH grant or NIDA grant.

Q. And in those three years did you ever study nicotine?

A. No.

Q. Anything related to tobacco in those three years?

A. No.

Q. Any study sponsored by RJR?

A. No.

Q. How did you end up hooking up with RJR?

A. One of the professors told me that -- had a friend who was a corporate recruiter, had seen an announcement for someone with my expertise in behavior, psychology, physiological psychology at RJR. I wrote a letter, had an interview and accepted the position.

Q. Had you had any contact with RJR before that?

A. No.

Q. Had you ever --

A. I mean, other than I knew a couple of people who worked there.

Q. Who did you know?

A. I can't even remember. Well, maybe I didn't know anybody.

Q. You do not?

A. I guess I did not. As far as I know, I had no contact with them before that time.

Q. Did RJR in those three years, to your knowledge, do any work in conjunction with Bowman Gray?

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A. Not to my knowledge.
Q. Who did you interview with at RJR?
A. I interviewed with -- the hiring manager was Dr. John Reynolds. I interviewed with, spoke with a number of people that day: Dr. Rodgman, Dr. Wayne Morris, Dr. Mary Stowe, the ones I remember.
Q. And what position did you interview for?
A. Title was senior behavioral scientist.
Q. How many times did you interview?
A. I think once, I mean, one day, spent the entire day at the research building.
Q. Were you told what your job would entail when you were interviewed?
A. Yes, in general I think looking for someone to study smoking behavior.
Q. Were you told whether or not RJR had anyone doing that prior to you being interviewed?
A. I met what was the group at the time, a very small group, included Dr. Reynolds, Dave Gilbert. I think Mr. Norman was in the group.
Q. What division or department was that under?
A. It was under Fundamental R&D at the time.
Q. Were there any other divisions at that time under Fundamental R&D?
A. Yes, I believe there were.
Q. Do you know what they were?
A. There was a group that did analytical chemistry. I don't know if that was their title. There was another group that did agricultural research, and I don't know their precise title either. I believe the ag people were under Fundamental R&D at that time.
Q. Any other groups that you can recall?
A. No.
Q. Was there a behavioral group, if you will?
A. The group I was interviewing for was called biobehavioral.
Q. So at least the --
A. That was Dr. Reynolds. He was manager of that group.
Q. At least as you sit here today, when you were hired there was three groups under R&D that you can recall?
A. Under Fundamental.
Q. Fundamental R&D?
A. Under Fundamental R&D. And again, I don't know if those were called, you know, specific divisions. We called ourselves "biobehavioral." I don't know if there was a firm delineation of that group.
Q. Were there other divisions, if you will, under R&D?
A. I don't know the answer to that. I imagine there were, but I don't know what they were. Research was downtown, development was out in the building where we are now. I don't know if R&D was one group or two groups.

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Q. When you say "research," what do you group under research?
A. The Fundamental people, the people I just described.
Q. And what was the other group?
A. Development.
Q. You don't know the official title of that group or department?
A. Yeah, what I'm saying is I don't know if R&D was one group. I don't know if it was Research and Development or Research and Development, one group or two groups.
Q. Who headed up Fundamental Research and Development?
A. Dr. Rodgman.
Q. And was there an individual that you could identify that was in charge of development as opposed to research?
A. Not that I'm aware. There were separated.
Q. Did you have interaction with development?
A. I did not, no, not at that time.
Q. Did Reynolds?
A. Did?
Q. Mr. Reynolds, Dr. Reynolds?
A. I don't know if he did or not.
Q. What group or division did health fall under; in other words, was there a department or group that studied the health effects of smoking? Still talking about when you were hired.
A. When I was hired. I don't know the answer for that for sure. There were people in the library who seemed to be in that area.
Q. What library?
A. The research library.
Q. What research in 1981 was being done at RJR with respect to health and tobacco?
A. I don't know that -- I don't know if there was. I don't know what would have been done then.
Q. Well, from 1981 to the present, what department did or what department or division did health-related research fall under?
MS. McDOLE: Could I have that question back, please?
BY MR. MAISTROS:
Q. Do you know if there's any department, division, group, entity within RJR from '81 to the present that studied the health consequences of smoking?
A. Well, probably the best person to answer that would be Dr. Simmons. I mean, he's director of smoking and health, so he would know best what that setup was.
Q. You didn't have any interaction with any such department or division?
A. Well, I would interact with people in Sam's division.
Q. How would you do that?
A. Attend meetings. If you could be more specific, that's pretty --
Q. What I'm trying to figure out is you mentioned Dr. Simmons. Who else could I talk

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to at RJR that would have knowledge of what research RJR did with respect to smoking and health?
A. I think he would be the best person or certainly for an overall picture someone like one of the senior management.
Q. Who?
A. Perhaps Dr. deBethizy.
Q. Would you have from '81 to the present regular meetings at RJR whereby you would be brought up to date on whatever the health department or health division was working on?
A. I certainly have attended presentations by Dr. Simmons, by people associated with his division and when Dr. Coggins was here he would make presentations occasionally. And yes, I would attend some.
Q. Who, if anyone, was under your supervision when you were hired?
A. Immediately when I was hired there was no one directly reporting to me.
Q. And you reported to Dr. Reynolds?
A. That's correct.
Q. Who did Dr. Reynolds report to?
A. Dr. Rodgman.
Q. And who did Dr. Rodgman report to?
A. Initially when I was hired I believe it was Dr. Morris.
Q. And then who?
A. After Dr. Morris retired it would be Dr. DeMarco.
Q. And who did DeMarco and/or Morris report to?
A. They would report to the -- I don't know exactly. Senior management.
Q. Morris and deMarco were not senior management?
A. Well, senior management for the tobacco company. I would consider them senior management for R&D, yes. They would report to, I guess, whoever the president was.
Q. How long were you senior research scientist?
A. Senior behavioral scientist.
Q. Senior behavioral scientist?
A. I think maybe three years, I don't remember exactly.
Q. '84?
A. Right, roughly in there.
Q. What happened in there?
A. I was promoted to senior staff scientist.
Q. And how long did you hold that position?
A. I think about until 1992, October of 1992.
Q. How did you your position differ from senior behavioral scientist?
A. Which position?
Q. Senior staff scientist.
A. It was a promotion. We were doing pretty much the same thing. The group had a couple extra people. I would achieve a little bit more responsibility in contributing to performance reviews. I did not have any salary authority or

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things like that or budget authority for people, so it was a little more senior lead researcher position.

Q. Did you ever supervise anyone as a senior behavioral scientist?

A. As a senior behavioral scientist, there were -- there was a laboratory technician -- or several people went in and out. I did not -- I don't think I would have been considered to have direct supervisory responsibility for those people. Still would have been Dr. Reynolds.

Q. How about as a senior staff scientist?

A. As a senior staff scientist there was more, again, responsibility in supervising people, although I still had no budget or salary authority, as I said. I would prepare more the performance reviews, have a little more independence in determining what their assignments were, et cetera.

Q. And what positions have you held since October of '92?

A. Since October of 1992 I was promoted to master scientist and head of the psychophysiology division. And earlier this year I was promoted to principal scientist and head of the psychophysiology division. When you get a chance maybe we could take a break when you're at a good stopping spot.

Q. Any time you want to. You let me know.

A. I could go for coffee if this is a good spot.

VIDEOGRAPHER: We're going off the record at 10:27 a.m. We're off the record.

(Recess taken at this time)

VIDEOGRAPHER: We're going back on the record at 10:34 a.m.

BY MR. MAISTROS:

Q. Is there any position higher than principal scientist at RJR?

A. We have at RJR what's called the dual ladder system where there's a technical scientific side to the ladder, and then there's a managerial side to the ladder. The principal scientist is on the technical side of the ladder. There is one higher slot, that would be senior principal scientist, on that side of the ladder. On the managerial side, there are higher positions.

Q. As master scientist, who did you supervise?

A. I supervised a group known as psychophysiology. That included -- well, there have been numerous people over the five years. When I first started? Would you like to give me a time?

Q. Well, yeah.

A. Everybody I can remember?

Q. Since you became master scientist.

A. Dr. Pritchard is in the group. Mr. Styles is in the group. Mr. Edwards. Trying to think back of the people who -- Dr. Kay was in the group who is now also Dr. Pritchard, Dr. Wally

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Pritchard's wife. Dr. Nelson was in the group. Mr. Conrad was in the group at one time. Not all these people are still currently in the group. That's all that comes to mind. There's a few others. I know I'm forgetting some people.

Q. Who is presently in the group?

A. Right now in the group we have Dr. Pritchard, Mr. Styles, Mr. Edwards, Mr. Guy, I forgot previously, and Mr. Morgan and myself.

Q. And you supervise these other five gentlemen?

A. Yes, they report to me.

Q. Is your role different from master scientist to principal scientist?

A. Not really. I'm still head of the psychophysiology division and still responsible for conducting research.

Q. What is psychophysiology in layman's terms?

A. Study of behavior. Psychophysiology, the physiology of behavior.

Q. And what are you studying, what behavior are you studying?

A. Principal interest is studying how and why people smoke, looking at physiological responses during smoking, looking at the effects smoking has on performance, mental performance, learning, memory, simple motor performance.

Q. Prior to 1981, were there people doing that at RJR?

A. Not that I'm -- Dr. Gilbert preceded me by roughly a year, and he was doing some of that. Other than Dr. Gilbert and work that Dr. Reynolds was doing with Dr. Gilbert, I don't know of anyone. That would have been in about 1980.

Q. Have you looked back to determine if RJR was doing similar work in prior years?

A. I have not done literature review in that area. When I was hired I was -- my understanding was this was a new group starting up that had not been -- this kind of work had not been done before.

Q. What was the goal of the work when you were hired?

A. I think the goal then is still what it is now, understanding how and why people smoke.

Q. Why? Why have that goal?

A. Our company is involved in selling cigarettes. They are constantly under criticism from people who don't like smoking. I think the more we know about how and why people use our products, the better we can separate the science from the rhetoric.

Q. Well, is it then your testimony that the goal of your group is to understand how and why people smoke to respond to the rhetoric or to improve sales or what, what is it?

A. Well, I think we do basic science to understand and try to get at the answers to some of those fundamental questions. I think part of the goal would be to try and understand why smokers who choose to smoke choose a particular brand of cigarette, what they like about it, what

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they dislike about it. And could that lead to cigarettes that they would choose over our competitors.

Q. Are you given written goals every year?

A. No, not really.

Q. Who provides direction?

A. Well, there's a strategic plan for the company, and direction is provided from the top down.

Q. And where do you fit in the strategic plan?

A. Well, my supervisor is Dr. deBethizy. I meet with him periodically. We discuss what goals we should set for ourselves and for the people in the division, and we try and achieve those.

Q. And I know you have a general goal, you testified, about how and why people smoke. Are there any refined goals that you've had over the years?

A. What do you mean by "refined goals"?

Q. That's pretty -- just trying to narrow it down from how and why people smoke to something more specific. Are there laid out objectives for your department?

A. From time to time there have been. Currently there are not laid out written objectives. We know the projects we should be working on. As I said, we meet with Dr. deBethizy pretty much every other week. We have staff meetings once a week. We discuss what we're doing and how things are progressing and what changes we might need to make.

Q. You provide written summaries of what you're doing?

A. Verbal. Typically not written, no.

Q. Did you ever provide written summaries?

A. Yes, for a long time used to hand in -- there were various forms of weekly highlights, monthly highlights, quarterly highlights. There have been many, many different variations of that theme, written.

Q. What years did you do weekly, monthly and quarterly highlights?

A. I don't know right offhand. We haven't done them for quite a while now. It was more early on than lately.

Q. Why did you stop doing them?

A. I think at some point many people questioned their value, the time that it took to prepare them, and was it really helping the project and I -- could be time spent doing other work.

Q. Was there at least an annual report that you're required to do?

A. Again, I do provide an annual summary of accomplishments versus what we thought we would be doing during the year to Dr. deBethizy, for myself. People who report to me provide those to me, and I do their performance reviews from those, and Dr. deBethizy does my performance review from the summary I provide him.

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Q. When you say you're studying how and why people smoke, you're just doing it from a behavioral standpoint, or do you actually do any sort of chemical testing and research related to that?
A. We do a lot of behavior. We take physiological measurements. I don't and no one in the group -- well, "chemistry" is a very broad term. We measure things like expired air, carbon monoxide. I don't know if you consider that chemistry. We have taken over the years various kinds of physiological samples, blood, urine, saliva, for looking at absorbed smoking components. We do not do the analyses. Other groups do those analyses.
Q. What groups?
A. That would be -- at one point it was, I think, called biological chemistry. There's a -- embarrassed to say I can't remember the name of the group that does some of our analysis now for us. We also --
Q. Sorry, go ahead.
A. I was going to say we also avail ourselves of other groups, analytical groups looking at chemical analysis. We do not do chemistry analysis in the group per se; but if we have a sample, we can submit it.
Q. Do you do animal studies?
A. My group does not do any animal studies at RJR. I have been involved in some animal studies at the Bowman Gray School of medicine.
Q. Your group?
A. Just me.
Q. What type?
A. Really, collaboration with Dr. Dworkin looking at animal self-administration.
Q. What kind of animals?
A. Rats.
Q. And what years were you doing that?
A. We're still doing that. We've been doing that for, oh, I don't know exactly, I would guess seven or eight years.
Q. Have you been able to duplicate any studies that have been published on self-administration of nicotine?
A. We've published our work. We presented our work at conferences. We've had a very difficult time doing that. We just presented a paper -- or Steve did last week -- where we think we have pretty much agreed with the literature that nicotine, under limited circumstances, under much more restrictive conditions than many compounds, can be self-administered.
MR. SHELLER: I'm sorry. Can you speak louder?
THE WITNESS: We have confirmed literature reports that the conditions under which nicotine would be self-administered are much more limited, much more environmentally sensitive. That appears to be a relatively weak reinforcing stimulus in these types of studies. I'd say we've pretty much confirmed -- well, I think right now we're in agreement that it's much like caffeine in

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these kind of studies.
BY MR. MAISTROS:
Q. What paper are you referring to?
A. There was a -- Steve presented at the CPDD, College of Problems in Drug Dependencies. That was held last month, two weeks ago, three weeks ago.
Q. What's the title, do you know?
A. I don't know the title of that one right offhand. One article we've published in the literature is comparing the reinforcing efficacy of nicotine, cocaine and methylphenidate. That may not be exact.
Q. How does that relate to your overall goal of establishing how and why people smoke?
A. Oh, I think that plays -- provides, I should say, an important information in the theory that's out there that I've published and, of course, disagree with, is that people smoke simply to get nicotine and that nicotine is a strong reinforcing stimulus in these types of animal studies. We've been looking at that to try and understand exactly what role nicotine might play and so far, again, I would say our data agreed with those reports that suggest that self-administration of nicotine is very environmentally sensitive, occurs under much narrower range of conditions and relatively weak, much more similar to caffeine than it is to other things like heroine or cocaine.
Q. So have you concluded that people don't smoke because of the nicotine or do smoke because of the nicotine?
A. Well, I think my position on that is very well published. I mean, the role of nicotine and tobacco use, there's been a series of articles. There is a role that nicotine plays, and I've published that and debated people on that for years now.
Q. Including the Surgeon General?
A. The role of nicotine in tobacco use did, I think, point to some very serious flaws in the arguments presented in the 1988 Surgeon General's report.
Q. If you could between now and tomorrow come up with the title of the paper that was presented last month, I'd appreciate it.
A. I will try. Dr. Dworkin is out of town.
Q. Is there a copy of it around?
A. That was his paper presented from his laboratory. So I mean, that was not, not involved in that.
Q. Where was that done?
A. College on Problems of Drug Dependence.
Q. Where is that located?
A. Nashville, Tennessee. Well, the conference was held in Nashville, Tennessee, mid June, June 13, 14, somewhere around there.
Q. Are you scheduled to speak at any conferences this year?
A. Yes.
Q. Where?

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A. I am scheduled to speak to a group in Korea in, I believe it's, October. I'm scheduled to speak to a group in Kohlapur in September. Those are the two that I think I'm scheduled for at the moment.

Q. Anywhere close to here?

A. Anywhere close to here? No, not --

Q. What are your two topics going to be?

A. The topics will be nicotine and addiction and the positive aspects of smoking.

Q. And the positive aspects of smoking?

A. Yes.

Q. What are they?

A. The positive aspects, as I refer to them, is what our group, part of what our group is trying to study in terms of the performance effects, learning memory, simple motor performance, attention, where the literature seems to be pretty clear that smoking seems to result in slight increases in performance and attention. And I refer to those as "positive aspects."

Q. What literature?

A. In other words, what the smoker might find are reinforcing.

Q. What literature?

A. I'm sorry?

Q. You said "the literature is clear"?

A. I think there's pretty good agreement on that. I mean, you can -- Dr. Sherwood did a review, I think in 1994, on that. Dr. Pritchard and I have recently done a review that's scheduled to come out. There's quite an extensive body of literature.

Q. Where does Dr. Sherwood work?

A. Currently he's at the University of Redding in England.

Q. Who funded his research, do you know?

A. No.

Q. Has he done any research for tobacco companies?

A. I don't know if he did. Well, he's done some research here with us at Bowman Gray School of Medicine. So, he has collaborated with us on some studies. I don't know what else he might have done.

Q. And you mentioned Pritchard. Can you identify any nonRJR-affiliated scientists who have written on the positive aspects of smoking?

A. I think if -- I don't know that they would use that terminology. I think if you look at what I refer to, as I say, I think I said that was my terminology referring to these performance effects, attention, memory, simple motor skills. And if you look at the work of Warburton, look at the work of Heinmarch, look at the work of Parrot, look at the work of Faltz.

Q. And these three have no affiliation --

A. Jeffrey Gray.

Q. These three have no affiliation

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with RJR?
A. They are all academic scientists. They have had -- well, they're all academicians.
Q. They have not done any research funded by RJR?
A. Dr. Warburton has. I don't know if Dr. Heinmarch has or not.
Q. How about Faltz?
A. Not that I'm aware of.
Q. How about Gray, does he have any affiliation with RJR and the Bowman Gray Medical School or Bowman Gray library?
A. You mean because of the name? No. That's Dr. Jeffrey Gray in England. He has collaborated on some research projects.
Q. With RJR?
A. Yes.
Q. What do you mean by "slight increases in performance and attention"? What does "slight" mean?
A. These are not huge measurable effects. You can see them in the laboratory in controlled settings. You can see, for instance, small increases in reaction time in choice reaction time task. You can see slight reductions in errors, sometimes, in memory tasks. The key difference is that things like smoking or caffeine in coffee seem to have small positive effects on these kinds of tests as opposed to other drugs of abuse, such as heroine, cocaine, marijuana, alcohol.
Q. You have not seen any studies where cocaine has been shown to increase, slightly or otherwise, performance?
A. Long term, no, I have not seen that.
Q. How about short term?
A. Not that I can recall right off, no.
Q. These studies that you've done, are they all on animals, people, or both?
A. Most of my work is done with human volunteers, subjects.
Q. The human volunteers that you work with, are they all smokers?
A. Anyone who we ask to smoke, yes, is a smoker. We would never ask a non-smoker to smoke. We have done some work with non-smokers.
Q. What type of work?
A. Over at the medical school -- well, I take that back. Those people were smokers now, too. The only work I can recall that I've been involved with with non-smokers would be measuring responses, psychophysiological responses to environmental tobacco smoke, asking them if it -- to rate the annoyance, the irritability, these kinds of things.
Q. Was that ever published?
A. Yes, some of them; that work has been published, yes.
Q. Do you remember any specific titles?
A. Not right offhand. It was published in conjunction with the work on Premier, some presentations with work on Eclipse.
Q. The smoking studies that you did

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or, for lack of a better word, testing that you did on humans that smoked, how did you compare the results you found to non-smokers? In other words, if you were testing smokers to determine if there were slight increases in performance and attention, who is to say that those increases weren't the result of just smoker's need for smoking as opposed to a non-smoker?
A. We haven't -- well, you can test non-smokers in the same sort of timing frame, but, of course, they would not smoke.
Now in terms of what I think you might be asking is, and formulated by some as withdrawal hypothesis, there you draw comparisons to people who have not smoked and then been allowed to smoke. And some of these performance enhancements are seen in non-deprived smokers, so that would seem to argue against, I think, what you're proposing.
Q. But have you done any studies to determine if smoking increases performance and attention in people who have never smoked?
A. We have not done that. There are studies like that in the literature.
Q. Human testing?
A. Typically with gum, nicotine gum or nicotine tablets. I have not seen one, no, where a non-smoker would be asked to smoke a cigarette. That would not be -- no one would do that study.
Q. Why?
A. I don't think you would ask -- you would never ask a non-smoker to smoke.
Q. Why not?
A. Well, I don't think you would ever get that by the review board.
Q. What review board?
A. Most human studies should go through a review, ethics review board to ensure that the subjects are treated properly.
Q. Is this an internal RJR board?
A. We have such, yes.
Q. And is it the policy of the internal RJR review board that they would not allow non-smokers to participate in smoking studies?
A. We would never ask a non-smoker to smoke, yes.
Q. What's the primary reason for that?
A. Well, I think I would just -- why would you do that? I mean, as people our interest is in smokers, people who choose to smoke. These people have chosen not to smoke. I think it would be easy -- if we were to do that, we would immediately be accused of trying to entice people into smoking.
Q. RJR is not interested in determining why non-smokers do not smoke?
A. Not that I'm aware of, no.
Q. RJR has never undertaken any studies to try to analyze and understand why non-smokers are non-smokers?
A. I'm not sure I understand.
Q. RJR sells cigarettes, right?

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A. Yes.
Q. The more people that smoke, the more people that buy cigarettes, right, general proposition?
A. That would be correct.
Q. So don't you think it's logical that RJR would try to understand why non-smokers are non-smokers?
A. I think it would be important to understand part of what we do, which is why I'm having difficulty with your question. And part of one of our interests is understanding differences between smokers and non-smokers, not to get people to smoke, though. That's the problem I have with your -- in trying to understand. And there do seem to be, if you look at smokers as a body and look at non-smokers as a population, there are, for instance, psychological differences in those two populations.
Q. Isn't it fair to say that --
MS. McDOLE: Wait. Had you finished?
THE WITNESS: No. It is not -- I've heard it stated many times from various CEOs: It is not our intention to get non-smokers to smoke. We would like people who choose to smoke, to smoke our brands. But we are not interested in non-smokers becoming smokers.
BY MR. MAISTROS:
Q. Would you agree with me that it's a major goal of RJR to increase its sale of cigarettes?
A. I think that's a business goal, yes.
Q. And it's your testimony that that goal has no component to it of increasing sales through getting non-smokers to start smoking?
MS. McDOLE: Asked and answered. You can tell him again if you want.
THE WITNESS: I've heard it at the highest levels. We are not interested in getting people who choose not to smoke to begin smoking. We are interested in getting our competitors -- people who smoke our competitors' cigarettes to smoke our cigarettes.
BY MR. MAISTROS:
Q. Once people start smoking, is it your goal to understand why they continue to smoke?
A. I haven't done any research that would specifically , I don't think, relate to that question. I'm interested in understanding what it is they find enjoyable about smoking. I'm interested in finding, again what I've referred to as, positive aspects may serve to reinforce their behavior as I've outlined in the role of nicotine and tobacco use. I'm interested in why they choose a particular cigarette style or cigarette brand, what they find good and bad about that. If they choose to continue smoking, that's their choice and they're free to make it.
Q. You have not studied why people continue to smoke once they've started?
A. Again, I think some of the positive aspects

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that I've talked about, as I've said in my writings, probably serve to help reinforce smoking behavior. I think people find cigarettes enjoyable, pleasurable, and some of these positive aspects that we talked about may play a role and probably play a role in reinforcing that smoking behavior.

Now if that's what you're thinking is why they continue to smoke, I think that's what I'm referring to as reinforcing.

Q. Let me get back to the ethical problem of getting non-smokers to smoke for testing. Why is it an ethical problem?

MS. McDOLE: Objection. Asked and answered.

A. I mean --

Q. You just kept saying it was unethical. You never told me why.

MS. McDOLE: That's not true.

BY MR. MAISTROS:

Q. Why is it unethical?

A. I don't think you would ask someone who has chosen not to smoke, to start smoking.

Q. But why?

A. I don't think you would.

Q. But only positive things could happen. It can only help your performance, your learning, your memory, your attention?

A. I don't think that's true. There are risks associated with smoking.

Q. What are those?

A. Well, I mean, they are written on the pack.

Q. What are they? What known risk does RJR at present day, July 1, 1997, associate with smoking?

A. Well, I'm not -- you're outside my area of expertise, and I think probably Dr. Simmons would be best to answer that. But certainly the risks that are printed on the packages are well known.

Q. The risks that are printed in America or other countries?

A. I'm aware of the risk, the warning labels that appear on cigarettes in the United States.

Q. Well, RJR manufactures and sells cigarettes across the world, don't they?

A. Yes, as far as I know.

Q. And there are cigarettes in Canada, they warn the world that cigarettes are addictive, correct?

A. That's the warning label on the Canadian cigarette package.

Q. That's a risk associated with smoking?

A. I was thinking more in risks of health effects.

Q. You don't think it's a risk of a health effect if you can become addicted to cigarettes?

A. I think my understanding of what that would mean is that if you start smoking, you might find it difficult to quit. If you can consider that a risk, I consider that a warning label that says if

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you start smoking you may find it difficult to quit.

Q. It doesn't say you may find it difficult to quit. It says in a quarter size of the pack "smoking is addictive."

A. That's what it says. And I think if you go and look at the process that they went through to get there, essentially, that's the sort of the modern day edition, definition, of addiction is the behavior that may be difficult to quit.

Q. Whose definition is that?

A. I think if you look at the Canadian Health Ministry, I think it's a very common definition of addiction, as I've tried to outline in various writings and presentations.

Q. Let me understand it then. Is it your testimony that the mere fact that you could become addicted to cigarettes is not a health risk?

A. I think --

MS. McDOLE: Well, first of all, you're assuming -- I think your question assumes things that Dr. Robinson hasn't testified to. It assumes that he agrees with you that smoking or nicotine is addictive.

MR. MAISTROS: I'm just repeating what your company puts on its product that it sells to the world.

THE WITNESS: I'm sorry. You will have to ask that again.

BY MR. MAISTROS:

Q. Your company puts on its product that it's addictive, I don't think you'll quarrel with that, at least in Canada, will you?

A. That's the requirement. That's a requirement by law as far as I know. And yes, we follow all the laws with regard to labeling.

Q. Oh, certainly with the scientists you have and the research capabilities you have, if it wasn't true, I assume you would contest it and fight it?

A. I think it depends on what you mean by "addictive." I've tried to, I've tried to outline that in numerous publications very carefully. If you're talking -- and I said it in print in my manuscripts, in the journals -- if by what you mean as "addictive" is behavior that may be difficult to quit, then cigarettes would qualify. But clearly the scientific evidence, as I've summarized in my papers, there's a world of difference between cigarettes, which are much more like caffeine and coffee and colas, than heroine, cocaine, barbituates and what I would consider addictive drugs. And that's the point I'm trying to make.

Q. You would disagree then with the terms of the settlement that were proposed and announced two weeks ago?

A. I think again, you have to -- I saw the warning label. What do you mean by "addictive"? My position has been well established. I've testified to it before. It hasn't changed. If what you mean by "addictive" is a behavior that

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may be difficult to quit, then cigarettes would qualify.
Q. Let's take --
A. If you mean something that's like heroine and cocaine, no, I disagree completely.
Q. Let's take your definition of addictive then: Difficult to quit. Do you believe that someone that's addicted to cigarettes, under your definition, that that addiction would fall in a health risk category?
A. What are you saying is my definition?
Q. Difficult to quit.
A. My definition of addiction, cigarettes would not qualify as I've tried to outline in my presentation.
Q. So that's fair? That's fair?
A. I think that's a --
MS. McDOLE: Wait, wait, let him --
MR. MAISTROS: Let me start over.
MS. McDOLE: Just a minute. Have you finished?
THE WITNESS: I hadn't, no.
MS. McDOLE: Okay, go ahead.
MR. MAISTROS: Go on.
THE WITNESS: I'm sorry. I've forgotten what I said.
BY MR. MAISTROS:
Q. Let me make it simpler.
MS. McDOLE: If you would just let him finish his statements.
MR. MAISTROS: Strike the question and answer. I'm starting over.
BY MR. MAISTROS:
Q. Accepting your definition of addiction as difficult to quit.
A. That is not my definition. That's what I'm saying. I think this has been proposed by many of the, what I call, nicotine addiction proponents. That seems to be the modern day layman's definition, which I have difficulty with. That's my problem, as I've tried to outline in my publications, that that is non-scientific, not experimentally testable easily. How do you measure someone's ability to quit or not quit? That's the point. That is not my definition. Should I put this back on?
Q. You agree with me that there has been scientific research that would establish that people who start smoking find it difficult to quit?
A. I think some people find it, may find it difficult to quit. I think the best, one of the best research references I've seen on that is Dr. Horn in the 1970s who said that -- likened it to a spectrum for most people. For some people it is easy to quit, most people it's somewhere between easy and difficult, and only for a very few is it truly difficult. And in no where, and this is my interpretation, no where is it impossible. Some people may find it difficult to quit.
Q. Have you ever smoked?
A. I smoked a little bit in college. I smoke

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an occasional cigarette. I do not consider myself a smoker.

Q. How many packs a day did you smoke in college?

A. It was more maybe a pack a week. Very occasional. Not very much at all.

Q. Have you smoked since college?

A. Again, occasion. Not on a regular -- never on a regular basis. I would smoke an occasional cigarette. Some research studies who test people define a smoker as someone -- or an ex-smoker as someone who has smoked a hundred cigarettes in their lifetime. I think I have smoked more than a hundred cigarettes in my lifetime.

Q. And I'm not trying to hold you to a specific definition of addiction or habit-forming or whatever you want to call it, the process where people like to continue to smoke, whatever you want to characterize that. What I'm trying to get at is, separate and apart from physiological changes to the body, cancer, emphysema, pulmonary disease, do you consider the possibility that people like to continue to smoke and have a hard time stopping smoking a health risk in and of itself?

A. I'm not sure I understand exactly what you're asking me.

Q. Well, let me ask you. Can you give me some of the examples other than what's on the cigarettes as health risks?

A. If I understand what you're asking me, I'm not sure I do, but I think a very similar question was asked to Dr. Benowitz at the Drug Abuse Advisory Committee. And he said they were asked about the, what they were referring to as, nicotine addiction being a health risk. And he said: No, that was, in his mind, paled in comparison to the risks associated with smoking. I don't know if that answers your question.

Q. It does somewhat and that's what I'm getting to.

You mentioned before, and this all started with you referred me to the warning labels on cigarettes to tell me what you meant by health risks. And that's when I thought of --

A. I think those are certainly the most widely publicized.

Q. So you would not concur in any such statement that "addiction/habit forming/like to do it" is in and of itself a health risk?

A. The continued -- I'm not sure. If there are risks associated with smoking and you continue to do it, you're exposed to those risks.

Q. And is it -- isn't it fair to say that you have a higher exposure rate if you continue to do it?

A. If you continue to smoke, you are continually exposed to those risks. And the only way to not be exposed to those risks would be to stop smoking. Now, I'm still not sure I understand what your separation is. If you're asking me what my understanding is -- and you're out of my area of expertise here -- perhaps Dr.

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Simmons would be better -- but my understanding is the health risks associated with smoking have principally been ascribed -- and I've said this in my paper -- to the tar fraction of smoking as opposed to the nicotine, if that's what you're trying to get at.

Q. Have you seen any research where there's health effects associated solely with the nicotine?

A. That was where I was trying to bring Dr. Benowitz's quote in there. He said he had been studying this for 15 years and to his mind, and my impression on this, is that that's very much unknown. Certainly his comment was if there are risks associated with nicotine, they pale compared to the tar.

Q. Have you seen any studies where nicotine and tumors have been linked?

A. No. That's outside my area, too, but I'm not aware of any studies.

Q. When you say it's outside your area, you're saying because you focus on the behavioral aspects?

A. I am a psychologist. I'm not an oncologist or a cell biologist or anything like that.

Q. In the 16 odd years you've been studying how and why people smoke, what conclusions have you come up with?

A. I think I've tried to summarize those very carefully in my writings. If you could be more specific. I think I've come to a lot of conclusions in those writings.

Q. What are the major conclusions you've come to?

A. That I would say people enjoy smoking, it's a pleasurable habit. I think the role of nicotine in tobacco use, as stated by people that I would say are the nicotine addiction proponents, is way overstated. I think that's probably the biggest thing I've learned.

I think certainly if you look at literature as it existed in the late '70s, mid-late '70s, early '80s when I first came to Reynolds that, of course, was a primary hypothesis. I think the more work I've done in that area over the last 16 years, the more I've come to find that hypothesis suspect, as I've criticized. There is a role. It's not the be-all and end-all. It's not why people smoke exclusively.

Q. What studies have you done to determine that nicotine addiction and its role is overstated?

A. I think -- well, I don't know that I've done any studies specifically on nicotine addiction.

Q. Well, you just testified --

A. I've done smoking behavior studies. And I think I find that, as I've tried to summarize in my publications, that there is a role for -- nicotine plays an important role in the sensory aspects of smoking, what smokers I think inaccurately refer to as "taste" of tobacco smoke,

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and it also has some mild pharmacological effects, which I tried to incorporate under the title "positive aspects," that I think help serve to reinforce the smoking habit. And I tried to outline them in the details of my paper. And I don't know that I can say it any clearer than I've said there.

Q. You testified that the role of nicotine addiction has been overstated. Specifically looking for what studies you've personally performed that would allow you to offer that opinion.

MS. McDOLE: Well, I think that's a misstatement. That is not what he said. Objection to the form.

THE WITNESS: Yeah, thank you. I'm not sure I said that either.

MS. McDOLE: I think he said the role of nicotine is way overstated.

THE WITNESS: In terms of --

MR. MAISTROS: We'll accept your attorney's question. You testified --

THE WITNESS: As smoking critics, I think, yes, the role of nicotine is way overstated as that is the only reason why people smoke.

BY MR. MAISTROS:

Q. I'm asking you what specific studies you have done to allow you to offer the opinion that people who state or put fourth the role of nicotine have overstated their case.

A. I think the clearest example that I was involved with was the Premier project where you had very many of the cigarette-like qualities. Premier heated rather than burned tobacco. It released nicotine into the smoke. People absorbed nicotine into their bloodstream in a very similar fashion as to using cigarettes, and it was a complete failure in terms of acceptability to smokers. That certainly is probably the most definitive thing that I've been involved in.

Q. And the chemical interaction of the nicotine with the human body was the same with Premier as it was in, say, Camels?

A. We did some studies that we've published, both in the peer review literature and in the Premier monograph, to try and get at that, exactly that answer. And to the best of, I think, that we could measure, which was pretty good, we found the interactions to be very similar; that the nicotine absorption from Premier was very similar to nicotine absorbed, the way the body handled it, absorbed from tobacco-burning cigarettes.

Q. What did the studies indicate was the main failure of Premier?

A. I think the consumers found it tasted terrible, was typically the response. They were very harsh in their criticism of how the cigarette tasted, how the cigarette smoke tasted, what they refer to as taste.

Q. Did RJR respond or attempt to respond in any fashion to those criticisms by adding additives?

A. Did we try -- I think research-wise they

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tried to make Premier the best cigarette they could, the most acceptable cigarette they could for the smokers. Then they played with different -- I was not involved in the development, design concepts -- but there were various different versions of Premier, certainly, in the laboratory and they all seemed to suffer from similar complaints.

There were other complaints in terms of hard to light, goes out to fast, too hard to draw. It was a -- there were numerous complaints. But the one that I think clearly stands out far and above the others was the taste aspects, the sensory aspects of the smoking.

Q. Do you know if any modifications to Premier were made to attempt to improve the taste?

A. I think I just said that, yes.

Q. And they did not work?

A. No, I think if we had ever -- as far as I know, if we had ever come up with an acceptable cigarette, it would not have been removed. I mean, they don't make it any more. No longer exists.

Q. Are there similar products to Premier that RJR is working on?

A. Well, Eclipse cigarette is sort of a next generation, if you will. It has some significant differences from Premier, but it does heat, has a fuel source, pure carbon fuel source that principally heats the tobacco as opposed to tobacco-burning cigarettes.

Q. Other than Eclipse, are there any other products RJR is working on that are similar in concept?

A. Similar concept to Premier? Not that I'm aware of. And I would stress again, there are some significant differences between Eclipse and Premier. I don't mean to imply that this is just a new Premier. It is a significantly different cigarette. About the only thing it has in common -- well, the major thing it has in common, of course, is the carbon fuel source that principally heats the tobacco as opposed to the cigarette burning down.

Q. Has RJR done any research in terms of marketing cigarettes that contain no nicotine?

A. We -- marketing, I don't know if we've done any marketing. We did a telephone, my group did a telephone survey, couple years, three, four or five years ago, where we seemed to -- or we tried to get sort of a gauge of an interest in smokers in a no nicotine cigarette. This was prompted in large part by Phillip Morris' introduction of -- one version was called Next, one version was called Merit Free, which we're essentially extremely low nicotine cigarettes. They did not do well on the market. They were unacceptable to consumers. And we did not pursue that.

Q. What did your phone survey find?

A. I don't remember exactly. I can't give you, I can't give you a number as to what the interest might have been in the cigarette like that. My impression is we asked a number of

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questions. My impression is people have a lot of interest in new concepts would probably be my take-home from that.

Now, having initial interest and then following through may be two different things. I think there was a lot of interest in the Next and the Merit Free and not a lot of follow through.

Q. Is RJR working on any cigarette presently where nicotine would be removed?

A. Not that I know of.

Q. As a behavioral scientist how do you study the effect of nicotine? How do you go about that without actually doing chemistry? Can you explain that to me?

A. I don't know that I studied nicotine per se. I've only done one study at RJR where we used nicotine. And that was really, we didn't really do it at RJR. That was part of the Premier project. I study smoking. And that -- so, I don't know what -- would you like me to tell you about the Premier study or?

Q. I'm still trying to get how you can offer an opinion that people who talk about the role of nicotine don't know what they're talking about when: A, you're a behavioral scientist; and B, you've done no studies to determine that.

A. Well, we -- well, I think we have done studies. I don't work with nicotine, per se. I work with smoking. I think that's part of the problem in the literature is that people who study smoking assume everything related to smoking is somehow tied to nicotine. That's the basis for my opinion.

The one study we did with Premier we talked about briefly a few moments ago was to look at nicotine -- how the body handled nicotine absorbed from Premier versus how the body absorbed -- handled nicotine absorbed from tobacco-burning cigarettes. Part of that study included an experiment or sessions at the Hershey Medical School where the smokers were given injections of nicotine. That's the only thing I've done with pure nicotine.

We currently have a study going on at the medical school where we're looking at nicotine gum. All my other studies in humans have been with cigarette smoking.

Q. What are you looking at with the nicotine gum?

A. Again, we're looking at -- we have a series of performance measurements, different testing regimes, trying to look at the effects of chewing nicotine gum on these performance variables.

About what time do you think we'll break for lunch?

MR. MAISTROS: Going to have to change the tape here in a couple of minutes. I think we have time for that.

VIDEOGRAPHER: You have about 14 minutes.

THE WITNESS: That would be great.

BY MR. MAISTROS:

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Q. The study you referred to on Premier you were studying the blood, were you not?
A. We took blood samples from those subjects, yes, and urine samples.
Q. And you concluded that the end effect, if you will, of the Premier and the regular cigarettes were about the same?
A. That's correct, essentially correct. Dr. deBethizy was the -- pharmacokinetics is more in his training. He was more or less the head researcher on that one. But yes, we compared how the body processed, metabolized nicotine absorbed from cigarettes, from tobacco-heating cigarettes. The Premier compared that in the same people to how they processed the nicotine absorbed from the tobacco-burning cigarettes.

The reason this was important was because Premier represented a very significant technological change in cigarettes. The tobacco was no longer burned. There was essentially no tar fraction to the smoke. There was no tar in the smoke. And you're outside my area pretty much, but there's a body of literature demonstrating that cigarette smokers seem to metabolize things like nicotine different than non-smokers. And this has been hypothesized that somehow this could be related to the tar fraction of the smoke.

Question then was: Okay, if you remove the tar fraction of the smoke, and the people still absorb nicotine from the smoke, is the body going to handle that, metabolize, handle that nicotine differently than from tobacco-burning cigarettes? And the answer -- part of that procedure was we had to know how people handled the nicotine irrespective of cigarette smoking. That was the part at Hershey Medical School, how they handled a known quantity of nicotine that was administered to them.

And in essence I would say, yes, you accurately characterized that there was not a significant difference between nicotine -- handling of nicotine absorbed from Premier versus handling of nicotine absorbed from tobacco-burning cigarettes.

Q. Have you done studies to determine the relationship between the levels of tar and nicotine and why people enjoy smoking?
A. In a very general sense I would say, yes, if I understand your question.
Q. In other words, have you put a bunch of people in a room, given them different ratios of tar and nicotine cigarettes and then study?
A. Wait, wait. Typically don't put a bunch of people in a room. We have looked at differing yields cigarettes, differing tar yields of cigarettes, principally commercially-available cigarettes, conventional cigarettes sold to the consumer. The tar-to-nicotine ratio runs very constant. I mean, it runs within a relatively narrow range is my understanding. And there are better people who can explain this to you than

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me. But the tar and nicotine yields of cigarettes, commercially-available cigarettes are -- co-vary highly; they are closely linked.

In the laboratory we have looked at differing yields of cigarettes, different tar yields, different tar-to-nicotine ratios to try and get at some of that, how those things can impact acceptance.

I think it's important to remember that that area has been proposed by a number of people as a very important area of research. You have people like Professor Russell who has for many years been calling for a reduced tar-maintained nicotine cigarette. You have what I call the Froggat Committee or the Froggat Commission, and there are a number of governmental agencies, principally outside this country, academicians, who have said that is a very important area to be researched. And we have looked at it.

Q. Have you studied the sales of your competitors to determine if any of the highest selling brands of cigarettes have anything in common in terms of tar and nicotine yields?

A. We've certainly studied our -- I've compared various products to our products in some of the testing that we've done. Their tar and nicotine yields are published just like ours are. So in that sense we have, yes.

Q. Have you yourself witnessed any conclusions that can be drawn with respect to the ratio of tar and nicotine yields in the success of a cigarette?

A. My knowledge in that area leads me to believe that the reason these commercial cigarettes are in a very narrow tar-to-nicotine range is if you get outside that range, the cigarettes become very unacceptable.

One of the major difficulties in -- and this has been published by many people -- one of the major difficulties in trying to research and develop a low tar-to-nicotine ratio cigarette that has been proposed by people like Professor Russell and the Froggat Committee, is that as you reduce the T-to-N ratio, the tar-to-nicotine ratio, those cigarettes become very sensorially unacceptable. They become very harsh. People say they just don't like them and wouldn't smoke them.

Q. It's an issue of taste?

A. Taste as I think the smokers would describe it. I think it's important there to remember that the word "taste" I think as a smoker uses it is not classical, excuse me, physiological taste. It's not sour, salt, sweet, bitter. It's the total experience of drawing smoke in the mouth and inhaling it. There's a number of non-taste related. You have nasal input, you have what's known as trigeminal or common chemical sense input. That total experience, I think, is what they refer to as "taste."

Q. Is there any association from a scientific end point as opposed to a layman's end

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point that there is an association between taste and the activity between nicotine and the brain?
A. I'm sorry. I don't understand that.
Q. When I use the word "taste" you seem to have trouble with it.
A. No, no, I am sorry. Just trying to be precise, that taste does not refer to sour, salt, sweet, bitter. "Taste" is a word that smokers use to describe the total sensory experience.
Q. Are you aware of any studies that have been done to determine if the total sensory experience includes the reactions that might take place between nicotine and the brain?
A. Nicotine and the brain, I don't think -- well, not as -- okay, if I understand, let me break that down. Does nicotine play a role in the sensory experience of smoking? I think the answer is yes, very clearly that nicotine has a very prominent role in the sensory experience of smoking. That sensory experience is primarily peripheral experience. It's in the mouth, it's in the nose, it's in the throat, it's in the chest. When you say "in the brain," that doesn't require nicotine interactions in the brain, but obviously the brain is processing that sensory information. So that's obviously how you are aware of what those sensations are.
Q. Are you aware of --
VIDEOGRAPHER: Mr. Maistros, we have five minutes left on the videotape.
BY MR. MAISTROS:
Q. Are you aware of research that's been undertaken to determine the effect, if any, that nicotine has on the brain?
A. Am I aware of research?
Q. Yes.
A. There is a large body of research that exists looking at nicotine interaction in the brain.
Q. Have you ever read any of that research?
A. Some of it, yes.
Q. Have you read the research that RJR has done on receptors?
A. Some of it.
Q. Have you utilized any of that research in the work that you're doing?
A. No.
Q. Has anyone at RJR ever asked you to?
A. Well, let me -- not in any of my behavioral research, not in my smoker-related research. I should be very specific about that.
Q. How have you used it then?
A. I've been involved with some of the nicotine analogue in the program.
MR. MAISTROS: We're going to take a break because we're going to have to switch tapes. And when we start up, we'll start up with the nicotine analogue program. Okay?
THE WITNESS: Can we have lunch now?
MR. MAISTROS: It's up to you. If

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you prefer.
THE WITNESS: Yeah. Well, it's almost quarter of twelve. For me to go another hour or two --
MR. MAISTROS: You can go to lunch now if you want, beat the crowds.
THE WITNESS: Come back at one o'clock, or 12:45?
MR. MAISTROS: Quarter to one.
VIDEOGRAPHER: We're going off record at 11:43 a.m.
(Lunch recess taken at this time.)
VIDEOGRAPHER: This is tape 2 of the videotaped deposition of John Robinson, Ph.D. We're going on the record at 12:53 p.m.
BY MR. MAISTROS:
Q. Dr. Robinson, what is an analogue?
A. I'm not a chemist. I can give you my understanding of what an analogue is. It's a compound that has a similar chemical structure. I don't know how similar a structure has to be to qualify as an analogue, but it shares some common structural properties with another compound.
Q. What work, if any, have you done with analogues at RJR?
A. We have what's been known as the nicotine analogue program. I've been sort of peripherally involved. I haven't done a lot of direct work with it. I know a little bit about it, trying to identify compounds that could be useful, particularly as potential therapeutic agents in treating certain nervous system diseases.
Q. What is the scientific purpose behind creating an analogue or identifying analogues?
A. Well, there's, particularly recently in the last, say, five or maybe eight, ten years, a lot of information coming out suggesting that compounds such as nicotine may be useful in treating such central nervous system diseases as Alzheimer's, Parkinson's, peripheral disease, ulcerative colitis. And the thinking is that perhaps analogue compounds might be useful as potential therapeutics in those areas.
Q. When the nicotine analogue program was originally created, was that one of the purposes?
A. I think probably originally. And Dr. Lippiello would be better qualified, I think, to answer that. I think originally one of the purpose -- original purposes was to identify potential compounds that might be useful in studying the central nervous system effects of nicotine.
Q. From a scientific standpoint, why would you need an analogue if you have nicotine to do those studies?
A. You -- and again, I'm not a -- I don't do those kind of studies myself. I think perhaps Dr. Lippiello could better describe that to you. When you have in general, what little I know about it, if you want to study the effects of a compound, it's nice to have in your pharmacological tests

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very specific compounds that could either substitute or block the effect; and that's how you identify that you are in fact studying a specific, what would be known as a specific effect as opposed to a more general effect.

Q. Did you ever see any research or paperwork that would support the proposition that one of the goals of developing an analogue was to replace nicotine in cigarettes?

A. I think that very subject came up at Mr. Waxman's committee meetings. I think that proposition has been talked about. Certainly that's not something that's ever been done in a cigarette or anything like that, but compounds that could potentially substitute that would be kind of the definition of an analogue, something that could possibly substitute.

Q. I can appreciate it hasn't been done, but do you know if there was ever studies undertaken by RJR to determine the feasibility of substituting an analogue for a nicotine?

A. Not in tobacco, not to my knowledge, no. I mean, in these biochemical studies as I've tried to describe them.

MR. MAISTROS: Wonder if you would mind if we can take a short break and switch chairs, because I have a feeling when we listen to that later, all that squeaking is going to be distracting.

VIDEOGRAPHER: We're going off the record at 12:58 p.m.

(Pause)

VIDEOGRAPHER: We're going back on the record at 12:59 p.m.

BY MR. MAISTROS:

Q. Have you specifically done any work with analogues?

A. Again, I was part of the team, the nicotine analogue team. Been in meetings. I haven't done any bench work that I can think of with analogues. I was recently involved in a -- as a human studies coordinator trial -- human studies coordinator of a trial, safety trial of a nicotine analogue. Again, that was more of an auditing, kind of supervising, overseeing the portion, that portion of the trial. I didn't do any work specifically myself with the analogues.

Q. What kind of trial?

A. It was a safety assessment of a compound, of a nicotine analogue.

Q. How would you as a behavioral scientist have any contributing role in a safety assessment?

A. Simply as someone with experience, someone at the company with the most experience in testing human subjects. It was not done by us, but I was sort of a liaison, if you will.

Q. Who did it?

A. I don't know how much might be proprietary or not proprietary.

Q. I think the whole deposition is proprietary, if I recall.

MS. McDOLE: The question right now

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is just who do it.
THE WITNESS: I don't know what might be considered, you know, product, company confidential information.
MS. McDOLE: Do you want to talk for a second?
THE WITNESS: Yes. I'm unclear as to what the rules are here.
MR. MAISTROS: Let me just ask you: Do you have a problem just telling me who did it, if I stop there or?
THE WITNESS: I don't know. I don't know. I don't mind telling you who it was.
MR. MAISTROS: You can confer with your lawyer.
MS. McDOLE: You don't know who it was?
THE WITNESS: I do know who it was, yes.
MR. MAISTROS: Want to confer with your counsel?
VIDEOGRAPHER: We're going off the record at 1:01 p.m.
(Off-the-record discussion.)
MS. McDOLE: During the break I conferred with Dr. Robinson and --
VIDEOGRAPHER: Want this on video?
MR. MAISTROS: Yes, we have to put this on record.
VIDEOGRAPHER: We're going back on the record at 1:06 p.m.
MS. McDOLE: During the break, I conferred with Dr. Robinson, and you can go ahead and ask the question again. I'll answer it but we've agreed that we're going to have some kind of a super protection. Is this pursuant to a protective order or --
MR. SHELLER: Yes, what you do procedurally the --
MS. McDOLE: No, no, my question is, is it pursuant to some kind of protective order?
MR. SHELLER: Protective order from Judge Newcomer, and the procedure is you designate the portion as confidential and the court reporter knows how to deal with that, we hope. We believe she does.
MS. McDOLE: It will be separated from the rest of the transcript.
THE REPORTER: Right.
MS. McDOLE: And something will be done to the videotape as well so that this question and answer are blocked out; is that right?
VIDEOGRAPHER: Yes.
(Testimony continues under separate, sealed cover.)
BY MR. MAISTROS:
Q. Who is doing your analogue studies?
A. This one particular study I talked about was a company known as Inveresk Clinical Research.
Q. How do you spell Inveresk?

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A. I think it's I-N-V-E-R-E-S-K, I believe.
Q. That's Inveresk?
A. Clinical Research.
Q. Where are they located?
A. In Edinborough, Scotland. I believe it's Edinborough.
MR. SHELLER: My daughter is there this week.
BY MR. MAISTROS:
Q. And?
A. Pretty city.
Q. And this is part of the nicotine analogue program?
A. That was a study, yes, conducted as.
Q. Did you actually travel to Edinborough?
A. Yes.
Q. And what was the issue on human safety? I don't understand.
MS. McDOLE: This is still part of the confidential.
MR. SHELLER: Until you say it isn't, then it is.
A. I'm being somewhat peripherally involved. Dr. deBethizy probably could answer these questions better than I could.
In the attempt to develop potential therapeutics for treatment of CNS diseases, as we spoke about a few moments ago, one of the first steps in a program such as that is safety testing in animals, and, if it meets all the requirements, then safety testing in humans; and then eventually you would hope to be able to take it to testing of the therapeutic treatment potential.
Q. What's the status of this project?
A. That test is completed, and I haven't really been involved since -- very much since the end of that test.
Q. Were there any problems in terms of safety?
A. I didn't see the final report. My impression is that in the amounts that were given, there were no serious safety problems.
Q. This analogue, is that a -- excuse my lack of knowledge on this -- is that a drug?
A. The analogue, the analogue is a chemical compound. If you were to manufacture it and sell for treatment of diseases, that would be FDA controlled.
Q. And is this a chemical compound that RJR, at least to your knowledge, is comfortable as an adequate substitute for nicotine?
A. Oh, no, I don't think it is. I don't think it's -- that it is a substitute at all. It's a compound that shares some chemical -- and again you're outside my area as a chemist; I am not a chemist; I'm a psychologist -- but share some chemical similarities with nicotine, but I don't think it would substitute for nicotine. That's a very complicated question. Maybe you can be more specific for me.
Q. Were any studies done to determine

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if it had similar effects on brain wave activity that nicotine has?
A. On brain wave activity, no, not to my knowledge.
Q. Well, what were you looking for in the human testing?
A. The human test was strictly what's known as a safety assessment.
Q. Like adverse side effects?
A. Adverse, exactly.
Q. Nausea?
A. Exactly.
Q. Do you know if any testing's been done to determine if any of the same reinforcing effects, if you will, of nicotine apply to this analogue?
A. That's the only human test I know of.
Q. Who is on the -- I think we're out of the protected area.
MS. McDOLE: Okay.
(Testimony continues in open volume of transcript.)
BY MR. MAISTROS:
Q. Who is on the nicotine analogue committee?
A. I think the name has changed now. Dr. Lippiello could provide you with those. He heads that up. And nicotine research -- I think it's now referred to as the nicotine research, and I can't remember exactly the name right now.
Q. You're on it?
A. I think I may be listed on it. I have not participated much lately.
Q. Is Dr. Reynolds on it?
A. No.
Q. He is no longer there, is he?
A. Dr. John Reynolds?
Q. Yes.
A. He is retired.
Q. And Lippiello heads up that committee?
A. Pat and Don deBethizy, Dr. deBethizy.
Q. Is there more than one analogue that's been developed by RJR?
A. Yes.
Q. How are they different, do you know?
A. You have to ask a chemist.
Q. Is anyone in the United States doing analogue work with RJR outside of RJR?
A. Yes.
Q. Who is that?
A. The person who comes to mind is Dr.Ed Levin at Duke University. I believe he's performed some animal tests.
Q. As part of your -- I'm sorry, is there anyone else that you're aware of?
A. Not that I know is doing any work. You should ask Dr. Lippiello.
Q. As part of your work in behavioral science, do you contract with outside entities to do testing?
A. We've funded research at universities.

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Typically we have contracts with, for instance, marketing firms to recruit smokers for us. I don't -- I don't know any research funded from, that I'm familiar with, where we would contract directly to do the studies. We do most of our research ourselves and then colloaborate with universities.

Q. Are you aware if there exists RJR-owned laboratory facilities outside the United States?

A. Laboratory facilities, no. I mean, there is a research and development department in West Germany, in Cologne.

Q. Have you been there?

A. Yes.

Q. What do they do that's different than what's done in this country?

A. I'm not sure they conduct very much research at all. My impression was it was a very small organization.

Q. Who is in charge of that facility?

A. I don't know.

Q. Why did you go there?

A. I was attending a conference in Europe with -- actually I think I was going to the Homburg nicotine meeting in the late '80s, 1990, somewhere. And my colleagues who I was going to the Homborg meeting with said, why don't you go by and give a presentation at the R&D facility in Cologne? I had never been there. Was there for a couple of hours, gave my presentation and left.

Q. Who was your colleague?

A. Dr. Perfetti.

Q. Could you spell that?

A. P-E-R-F-E-T-T-I.

Q. Do you know if they do human testing in West Germany?

A. I don't believe so, no.

Q. Do they do animal tests?

A. No, not that I'm aware of.

Q. Does RJR contract with outside laboratories in the United States for animal testing?

A. We have, yes.

Q. Which ones?

A. The only ones I'm familiar with are -- and that's again outside my area -- Dr. deBethizy probably could answer better. I know we did some studies for Premier at Batelle.

Q. In Ohio?

A. I believe we may have done both Ohio, and I think there's one in Washington. I was not directly involved with those studies. I have seen presentations. That's why I'm familiar with that.

Q. What's the process that your department has to go through before a research project is commenced?

A. There's no formal process, as I described before. We meet periodically, every week, staff meetings. I have a one-on-one status meeting with Dr. deBethizy every two weeks. He meets on a regular basis with his peers, and projects are discussed and goals set. There is no formal

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project approval process that I'm aware of.
Q. Has there ever been?
A. Not on anything that I've participated in. I don't know if there's --
Q. What I'm getting at is if you wake up on a Monday and decide you want to do research on a particular subject, can you just assign that to somebody or do you have to send up a memo and a request or something?
A. I think that depends on what it is. There is some things -- sure, I could do that. And there are other things -- and I should point out, not to misstate anything, that there is a formal procedure for having human studies approved by the ethics and what's called the Human Research Review Committee. So in that case there is a formal procedure for human testing. But that's not to approve the goals of the project, only to approve the ethical treatment of subjects.
Q. Well, at the beginning of every year is there a stated outline of what you hope to accomplish for the year?
A. Not formally. In the past there have been. I don't have anything like that in the last few years. Occasionally you used to prepare performance objectives, sort of one- or two-sentence statements of the major accomplishments you hope to complete during the year. That was people at my level and above -- well, at master scientist and managerial levels and above.
Q. Whether written or not, what are your goals for this year?
A. Well, if I have a specific area, one of the things I've been doing a lot this year is this, and that's this kind of legal support. That's not a goal, but that's been taking up a lot of time.
Q. You haven't been deposed prior to or in 1997 before today, have you?
A. No.
Q. What kind of legal support have you given?
A. I was -- I've been scheduled for deposition, I believe, every month since last September. This is the first one that's taken place. Every month except May and June.
Q. And what else have you done for legal support?
MS. McDOLE: Well, I don't think you need to talk about specific things that attorneys asked you to do. How are we going to avoid the privilege problem here? He's not going to --
MR. MAISTROS: What do you mean by "legal support"?
MS. McDOLE: And you can answer generally, Dr. Robinson.
THE WITNESS: Providing advice, review of, for instance, comments to FDA or things along that line.
BY MR. MAISTROS:
Q. Have you been asked to comment on any scientific reports that Plaintiffs might have

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asserted against RJR?
A. No, I have not reviewed any -- not that I'm aware of, no.
Q. Has anyone asked you to review any depositions of scientists to determine the validity of any statements they might have made?
A. I read -- I wasn't asked for that purpose, no.
Q. What did you read?
A. I read Dr. Benowitz's deposition in the Mississippi case.
Q. Why is that?
A. Just part of preparing for my deposition in that case.
Q. Did you read any other depositions?
A. I think I read a -- I don't know if it was a deposition. I read a statement that Dr. Henningfield gave. I believe it was in the Florida case.
Q. Did you consult on the Florida case that went to trial?
A. Which case is that?
Q. The most recent one that was a RJR verdict?
MS. McDOLE: He's talking about the Connor case.
THE WITNESS: Connor. No, I don't believe I did.
BY MR. MAISTROS:
Q. Are you getting paid by anyone, including RJR, extra compensation as a result of this?
A. For appearing in court?
Q. Yes.
A. No.
Q. Is all of your compensation paid by RJR at this time?
A. Yes. I should say I received two Chairman's Awards in the last year -- well, in the last three years I guess.
Q. What's a Chairman's Award?
A. A special recognition award for contributions made. I think some of this was probably factored in. I do not think it was a direct result of this, of that activity.
Q. I'm sorry, what was the last part? I cut you off.
A. I do not think it was a direct result of this type of activity.
Q. Is that a monetary recognition or?
A. Yes, there was a letter and monetary recognition.
Q. Is a Chairman's Award the highest award you can receive at RJR?
A. I'm not sure. I believe it may be.
Q. Did you receive any compensation from Bowman Gray?
A. No, I do not.
Q. When did you receive your two Chairman's Awards?
A. One was earlier this year, one was probably 1995, I guess.
Q. Was there a formal announcement of

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this?
A. Yes. First one there was and you get your picture in the company newspaper, et cetera.
Q. How many are given out every year?
A. I think it varies. Sometimes you'll have a team of numerous people getting awards. Sometimes there's maybe one or two or three.
Q. Was there any specific accomplishments cited for the '97 award?
A. No, just generally thank you, I think, for all my efforts in a number of areas.
Q. Were any specific areas cited?
A. No, not that I remember.
Q. What are you working on right now, today, other than this depo?
A. I'm sorry?
Q. Take this depo out of the factor, what are you working on at RJR?
A. Well, this is it right now. I mean, you want a list of projects?
Q. Well, you mentioned you were involved a lot in legal support in the past --
A. That's been a --
Q. -- nine months?
A. -- pretty good chunk of time, yes.
Q. And outside of that legal support, what percentage of your time is spent on legal support?
A. I would have to go back and, have to take a guess, maybe 30 percent -- maybe 20 to 30 percent over the last eight to twelve months.
Q. And what else are you working on?
A. I would say the other largest chunk of time includes working on what I've tried to describe as positive aspects, basic research on smoking behavior, the physiological, pharmacological effects of smoking, and probably the greatest portion of my time has been in support of the Eclipse project.
Q. In layman's terms, what does "pharmacological" mean to you when you just described your responsibilities?
A. Pharmacological means, in that sense, studying what responses occur in the body during and following smoking. The psycho-physiological variables that we've discussed.
Q. So a pharmacological would be a broad description and a narrower description would be both physiological and what?
A. I think those interested in pharmacology might describe the psychopharmacology. The behaviorist would describe it as psychophysiology. We're looking at basic what I described as positive aspects. Looking at smoking behavior, absorption of smoke components, and behavioral and physiological responses that occur.
Q. And is it fair to say you've been doing that since '81 in some respect?
A. A large portion, yes.
Q. And have you undertaken any projects to determine the adverse effects of smoking since '81?

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A. I don't know. Could you be more specific in what you're --

Q. Well, you described how you were studying the positive effects of smoking on, is it fair to say, the human body or just generally the positive effects?

A. I think that would depend maybe perhaps on your point of view. I think some people who have been -- certainly we've published our work quite extensively, I think. Very proud of what we've published, and some people have pointed to that as not being complimentary to smoking. You know, again I've been interested in the science of what I've termed the positive aspects, we do the studies and science come out, the data come out the way the data come out. In general, there's been pretty good agreement with the published literature that there are these small, positive improvements in things like learning memory, simple motor performance.

Q. Well, when you started your research in 1981, at that point in time were you aware of the positive effects of smoking?

A. There was not that much out there back then. If I think back, there probably wasn't very much out there.

Q. What I'm getting at, is it fair to say that one of your goals since '81 has been to understand the positive effects smoking can have?

A. I think one of the goals has been to understand, yes, how and why people smoke, understanding what those effects are.

Q. Focusing now --

A. Which I've, you know, used the positive aspects as a convenient --

Q. I'm using --

A. -- title.

Q. -- I'm using your title in my question in case there was any question. When I say "positive effects" I'm talking about those things you mentioned in memory, attention, et cetera, as a catchall, those positive effects.

A. Positive aspects, yes.

Q. Positive aspects. And my question is: Since 1981, have you done similar studies to determine potential negative aspects of smoking?

A. Well, as I said, we've designed the studies. The studies -- the data come out the way they come out. We could do the same studies and report negative effects on performance, memory, attention, anxiety. That's -- typically they've come out and supported the literature that's out, the other literature that's out there from other laboratories. So that's the way the data have principally come out.

Q. I understand that all your data suggests the positive aspects. Have you designed any programs to determine if there's any negative aspects of smoking?

MS. McDOLE: Well, objection to the question. It assumes that the program is designed solely to elicit positive effects of smoking. I'm not sure that's true.

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MR. MAISTROS: I just wanted to avoid the implication he thought my question was phrased in such a way that I wasn't going to elicit a proper response. My question is -- I'll make it as broad as possible.

BY MR. MAISTROS:

Q. Have you given any consideration to doing any sort of studies that might determine if there are any adverse effects related or adverse aspects related to smoking?

MS. McDOLE: Objection to the assumption that that wasn't part of the study to begin with. Go ahead. You can answer the question.

THE WITNESS: Again, as I described, we designed behavioral studies to study the effects of smoking on behavior, on performance, on memory, attention, anxiety. In general, those studies have shown that there are small, positive effects. They could have come out the other way. There are data in the literature that do come out the other way. We've commented on those studies at conferences, et cetera. It's very easy to show a negative effect of nicotine, if you will. You give a non-smoker four to eight milligrams of nicotine gum, like some of the researchers at NIDA have done, and you will see negative effects on performance, probably because the people get light-headed, dizzy, naseous. These are not, in my opinion, well-designed studies.

Q. When you're doing these studies that have shown positive performance effects, have you varied the amount of tobacco intake with the participants utilized in the studies? In other words, have you compared like a pack-a-day smoker versus a two-pack-a-day smoker to see the effect on performance?

A. Typically not in that sense. The people we generally recruit, we screen them and ask them if they smoke usually more than 15 or 20 cigarettes per day.

Q. Why that level?

A. We think that represents probably a large population. I think a lot of people report smoking a pack a day, approximately a pack a day. And that way you're not getting -- studying people who may only smoke four or five cigarettes a day. It adds some homogeneity, some similarity to the group of people you're studying.

Q. When you say that you have determined that in some cases smoking causes an improvement in performance, memory and anxiety, you're talking about improvement in people that smoke 15 to 20 cigarettes a day?

A. Typically in our studies, that's correct. I would say results in. I don't know causes is -- certainly results in.

Q. Well, how can I as a layperson understand how that will help you understand the true effect of nicotine if all I can compare it to is 15- to 20-cigarette-a-day smokers?

A. That limits the general realizability of

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your data set. But I mean, that's an inherent problem in most studies. I mean, you know, you pick a population of smokers that you're interested in. Most of our work has, in the past, has been done on males. I mean, most of our work has been done in caucasians. You try and --

Q. Why is that?

A. Well, you're measuring changes in behavior, changes in your -- that sometimes are difficult to measure even in laboratory. So you like the population to be as uniform as possible, so that you don't have extraneous variables that you're not aware of operating. And it's simply control procedures.

Q. I guess what I'm trying to get at is, what does the data tell you if you can only say that it has slight increases in performance, memory and attention in people that smoke 15 to 20 cigarettes a day if you can't compare it to, for example, the occasional smoker or the non-smoker?

A. Well, I think you can. I think it provides -- science is a body of work. One laboratory can't do everything, so you do studies. You design your studies to be correctly experimentally -- to be correct experimentally. You do the study. You publish the data. You compare it, talk to other scientists who maybe used a different population.

Some of these performance effects that we've talked about have been published for non-smokers using gum and the tablets that we've talked about, not by us. So scientists -- you use -- again, one laboratory can't do it all. You focus on a particular area, then you compare and contrast your data and results with other scientists. That's part of the publication and review process.

Q. Will you accept as a general proposition that the effect that nicotine has on the body varies even if the intake is the same between somebody who takes in nicotine through gum versus somebody who smokes?

A. Okay. Once more, please?

Q. Just as a general proposition, will you agree that there's a consensus in the scientific community that the effect nicotine has on the body will vary depending upon if you take it in through gum versus smoking?

A. I think it depends what specific effect you're talking about. Certainly there are data suggesting that smoking can have these performance effects or result in these performance effects and that nicotine gum can result in similar performance effects. Now there are some similarities and some differences.

Q. And maybe you have done this and you just haven't told me thus far. Wouldn't it be interesting to do the exact same studies you're doing on a two-cigarette-a-day smoker compared to the 15- to 20-a-day cigarette smoker?

A. I think that would be interesting research to do. I think that's a much smaller subset of the population.

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You know, again, part of understanding how and why people smoke the particular brand that they choose, I would rather get people who smoke a pack a day to switch to my brand than two cigarettes a day.

Q. What brand do you use when you do these tests?

A. We've tested many different brands, brand styles.

Q. Is there a control cigarette you use in all of your tests?

A. No. I would say no.

Q. I assume you know the nicotine content of the cigarettes you use in your tests?

A. We very often, if we do not know what the nicotine yield is on the FTC method, we will submit those, FTC, Federal Trade Commission, FTC method for smoking of cigarettes, we don't have the numbers published. We can submit those to the analytical chemistry laboratory. That would be an example, as we spoke this morning, of submitting something for a chemical analysis. And they would report the number to us.

Q. In other words, you can do your tests and then submit your cigarettes to either in-house or ex-house scientists and they'll tell you what the nicotine yield was?

A. We would submit usually before, because before we do any testing with human volunteers, we tell the human research review committee what cigarettes we would be using. And in that procedure we will describe the yields of those cigarettes. So typically we know those numbers before we do our tests. And obviously once those -- maybe not obviously to people who aren't familiar with the method. When you submit those cigarettes for sample analysis, they don't come back, they are smoked up in a machine, and you just get the tar and nicotine yields back, the numbers.

Q. And in your studies of the increases in performance, memory, anxiety, et cetera, have you seen a correlation just between nicotine content alone and those performance characteristics?

A. I would have to say no, not that I recall, if I understand your question.

Q. I'm taking it as a given that you have found performance enhancement characteristics of smoking. I'm trying to figure out if you've narrowed down why that is.

A. Why that is?

Q. Yes.

A. Well, we've done tests where we've used differing yields of cigarettes. For instance, we have on a number of occasions used the Next or the Merit Free cigarette, which has very little or no nicotine as sort of a control cigarette, and then compared that to other cigarettes of differing yields. I think I described a study this morning that we did like that.

And so in that instance you're controlling -- it has -- the Merit cigarette has

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similar tar and carbon monoxide yields, et cetera, as the Merit Free, but the biggest difference is in the nicotine yield. And then you study the effects and see. When you see effects in one and not in the Merit cigarette, I think we've published that and cited, for instance, that the changes in heart rate in EEG that we saw with the Merit we thought were due to nicotine absorbed from smoking. That's in our psychopharmacology paper.

Q. Did you consider the change in the heart rate an adverse or positive effect of smoking?

A. I would not consider it a positive effect. I don't know if it's an adverse effect. And I think I've heard Dr. Benowitz speak on that, on the cardiovascular effects of nicotine, and I'm not sure he says if he knows if it's adverse or not.

Q. In your studies I assume even in biobehavioral you do heart rate studies?

A. We've measured heart rate as an end point, yes.

Q. Have you --

A. Certainly not in all our studies.

Q. Have you drawn any conclusions in any of your studies of the effect of smoking on heart rate?

A. Generally speaking, following smoking, there is an increase in heart rate, particularly in many of the studies we did early on, people were not -- were deprived, if you will, did not smoke since midnight or 11 p.m. the night before and this is the first cigarette of the morning, and you generally see an increase of heart rate, maybe five to ten beats per minute. That Merit Free study I described a minute ago, that would be a good -- we published those data there, those graphs. Typically these kinds of studies, it's important to remember, are done in a quiet soundproof laboratory room. Subjects are seated quietly, often with their eyes closed. If the people were walking down the hall, you might not be able to measure this increase in heart rate. And this is from a resting baseline level, if you will.

Dr. Gilbert did a very interesting study when he was here, where he had people in the same room, in the same room that I've described, the soundproof sort of testing chamber, who were differing in their opinions on -- I think he, for instance, asked people to talk about controversial subjects and found that, you know, if he got someone who was pro life and someone who was pro abortion, they had a discussion; that the discussion seemed to swamp out these heart rate effects that you could not measure them when people were having these disagreeing -- a discussion even though they smoked. So I tell you that to try to put those in perspective, those increases.

Q. But as a general proposition, you have found that people who smoke have generally an

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increased heart rate immediately after smoking?
A. Very soon after, particularly if they have not smoked for a long time, if they are in a resting condition, their heart rate generally increases. Again, I would point you to that Merit/Merit Free paper that we did that will give you, I think, a good -- those people had not smoked, I think, for two or three days, if I remember correctly, and so that would give you, I think, very close to perhaps what the maximum might be that you might expect.

Q. What do you do in your studies if you have increased heart rate and the subjects that are being studied have heart problems?
A. We don't -- we ask people to -- they sign a declaration that they have no adverse health problems that they know of, so we would never test anybody with a known heart problem.

Q. Well, you're not having them do strenuous exercises, are you?
A. No.

Q. What's the concern if they have a heart problem?
A. Well, we would not test anyone in any medical type testing situation with -- or psychological type testing situation who had a health problem. That's part of our assurance to the committee, that we don't use people like that.

Q. Is there a specific question related to heart conditions?
A. I think they are asked if they have any heart disease on the consent form.

Q. Do they have to, when they sign the consent form, waive their right to sue RJR if anything adverse happens during the testing?
A. I don't believe that's in there, but I'm not positive.

Q. When you do human testing, do the people that are smoking all smoke the brands that they normally smoke?
A. Sometimes they do; sometimes they don't.

Q. What affects the nicotine content of any particular cigarette?
A. The nicotine content of the -- content of the cigarette of the tobacco round is the blend of the tobaccos that are put in there.

Q. Is that the only thing?
A. The content, referring to the nicotine in tobacco, would depend on the tobacco that's in the cigarette.

Q. How about after the tobacco is burnt, what affects the nicotine content?
A. I'm -- there are cigarette designers who could answer this much better, but there's a host of things in determining what you're calling content I think would be FTC yield. And there are things like filters, not filtered, filter dilution, circumference of the cigarette. I'm not a cigarette design person.

Q. Who would be most knowledgeable about that?
A. Dr. Townsend I think.

Q. You have not read any studies that

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discuss the -- and when I say "nicotine yield," I'm talking about as it's taken into the body now, how it's absorbed in the blood. Have you read any studies on that aspect of nicotine yield?
A. What I would call nicotine absorption?
Q. Yes.
A. Yes, sure.
Q. What studies?
A. Many, many studies.
Q. In-house?
A. Oh, in the published literature, hundreds in the published literature.
Q. What's your understanding of what affects nicotine absorption?
A. What affects? I can tell you my opinion on that. The two, I think, determining factors in how much nicotine is absorbed from cigarette smoke depends, one, on the puffing profile of the subject, how the cigarette is puffed, which directly influences the smoke that comes out.
And then one thing that's often left out in many studies is the subject or the smoker can then inhale zero percent to close to 100 percent of that smoke, and then so inhalation really is the ultimate determining mechanism, factor, of how much and what is absorbed.
Q. When you say those are the two main factors, what do you -- if you had to put a percentage on all the factors related to nicotine absorption, where would those two total?
A. I would probably put -- well --
MS. McDOLE: I'm not sure what the question means. Objection to the form of the question.
BY MR. MAISTROS:
Q. We started out with your understanding of what affects nicotine absorption into the blood of the human body. And you said the two biggest things are -- I'm not saying that you used the word "biggest," but the two major things you cited were the puffing profile and inhalation. What percentage would those two represent of the factors?
MS. McDOLE: Well, objection to the question, to the assumption that you can put percentages on these factors.
THE WITNESS: Yeah, I don't know a percentage.
BY MR. MAISTROS:
Q. You cited them as the two major reasons. Why is inhalation so important?
A. Well, I think they're both important because of how you puff determines the smoke chemistry, the quality of the smoke. How you puff can influence the taste, as we spoke about this morning, of the smoke that the smoker achieves. Depending upon how that smoke tastes, I think then can influence the inhalation behavior. Obviously if the smoke is not puffed, it can't be inhaled so that influences absorption. If it's puffed and not inhaled or inhaled to varying degrees from zero to 100 percent, influences absorption. So those both have to be present. You have to

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generate the smoke with the puff, and then you have to inhale it to absorb it.

Q. Why, though, is the inhalation process necessary to the absorption of nicotine? Can't I put a cigarette in my --

A. Sorry.

Q. Scientifically can't I just put a cigarette in my mouth and have it sit there and absorb nicotine?

A. You might get a little -- my understanding is if you -- the studies I've read where people have puffed and just held the smoke in their mouth and blow it out, you do not get very much absorption of nicotine at all, from cigarettes. So if you don't inhale, typically you do not see -- I mean, we have tested people in our studies who smoke and say they smoke one to two packs a day, and we find very little nicotine metabolytes in their blood. So to me, that means they are puffing but not inhaling.

Q. And have your studies focused upon people's puffing profiles or habits?

A. Yes. We've done a lot of measurement of puffing profiles.

Q. And have you done a lot of measurement of inhalation profiles?

A. We have done quite a bit of work on trying to measure inhalation behavior. That's very -- much more difficult.

Q. How does understanding a person's puffing profile and inhalation behavior assist you in understanding how and why people smoke?

A. If we are -- again, this came about early on, I think, in my work I realized when I first came, reading the literature, that there were very many flawed studies in the literature that simply assumed that, for instance, whatever number was printed on the package or on the FTC report is the amount of nicotine and tar that person would absorb. Well, it quickly became apparent to me that the amount of nicotine absorbed was highly critically related to puffing and breathing behavior.

If you are going to try and understand what the effects of smoking are, the heart rate, the blood pressure kinds of things, the psychophysiological effects we've talked about, it's very key from a scientist's standpoint to understand how much nicotine was absorbed; and measuring puffing profiles and measuring breathing profiles was an attempt to try and get a good quantitative handle in our studies.

Q. Did you, as a result of those studies, reach any conclusions on smoking characteristics of people that compensated for, say, low tar, low nicotine yield cigarettes?

A. If you could be more specific. You know, what compensation means different things to different people.

Q. Let me make a statement and tell me if I'm off base. As a general proposition, some literature would suggest, would it not, that people who smoke low yield, and I'm referring to

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nicotine yield, cigarettes compensate for that low yield by taking longer puffs and deeper inhalations?
A. Okay. There's a body of literature out there that -- and suggests that different people smoke different cigarettes differently. Compensation to me means that if you're -- you, for example, are the smoker of the 15-milligram cigarette, and I bring you into the laboratory and I measure how you smoke that 15-milligram tar yield cigarette. And maybe while I'm thinking of it, you said low nicotine yield. Tar and nicotine, I think we've talked about, co-vary highly so low yield cigarettes are low in tar and nicotine.

I would measure how you smoke that 15-milligram cigarette. I would then give you perhaps a low yield cigarette, 5-milligram cigarette, and I would measure your puffing profile on that. And in a short-term switching study, the data would suggest that people in that kind of switching situation do take, for instance, larger puffs, perhaps more frequent puffs, a little bit closer together in time, maybe take a slightly larger total puffing volume over the course of smoking that cigarette. My data on the inhalation behavior was very difficult to measure. I did not notice in that particular type of study, and I am not even sure I've done that particular study that I'm describing, but inhalation behavior seemed to be quite consistent for people across different cigarettes.

Now, that being said, in those short-term switching studies, I think even some of our severest critics, such as Dr. Benowitz and Hennyfield, have said that compensation may be a very short-term phenomenon. That when I give you that 5-milligram cigarette, yes, you may take a bigger puff, you may take, closer together, puffs closer together in time, but over the course of time, the data suggests that some of those parameters begin to drift back to where they were. I think there's a -- how far they drift back, how quickly they drift back, I think depends on the smoker, on the size of the switch, the length of the time you're following. I think that is a very inadequate field of research, data-wise. We simply don't know what happens when these people go back, if they were to switch and stay for a long, long period of time with these cigarettes.

Q. What is your understanding of why low yield cigarettes were introduced into the marketplace?
A. I don't know why they were introduced. My understanding is consumers wanted them. I mean, I think I've heard filters were added because of articles such as appeared in Reader's Digest. That's what consumers wanted.

Q. When you say consumers wanted them, is it your understanding they wanted them because of the perceived lower health risk associated with smoking lower yield cigarettes?

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A. That may be. I don't know that for a fact.

Q. Have you ever done any consumer tests that would indicate that lower yield cigarettes are better tasting than higher yield cigarettes?

A. I think -- I haven't done that study that I would describe with that end point in mind. I think people who normally smoke a ultra low yield cigarette find their cigarette better tasting than higher yield cigarettes. I mean, they choose their brand, I think, in large part for the sensory experience that accompanies smoking, and their usual brand is their best tasting brand, that's why they smoke it. And so if you take someone who smokes a very low yield cigarette and give them a high yield cigarette, I don't think they would describe that as tasting very good.

Q. Have you done studies to determine if people initially begin smoking start out with ultra low yield cigarettes and then eventually smoke higher yield cigarettes?

A. No. I have not done any studies like that.

Q. Well, have you done any studies to determine --

MS. McDOLE: Had you finished?

THE WITNESS: No. I was going to say I attended, in December 1994, a conference at NCI on the -- that was reviewing the FTC method, and I forget the researcher's name, but he presented data that would suggest just the opposite effect. My understanding is that people generally start with higher yielding cigarettes and then switch down. And I would say his data supported that.

BY MR. MAISTROS:

Q. I assume part of your studies you're interested in what the consumer wants are out there?

A. What they like about a particular cigarette, why they think this cigarette is better than that cigarette.

Q. Have you done studies to determine if the consumer wants with respect to low yield cigarettes and filter cigarettes were non-smokers or smoker wants, when you say "consumer wants"?

A. Oh, if it's a cigarette, only smokers.

Q. I just want to -- back a couple of minutes ago when you were talking about consumer wants, were you referring to smokers who are already smoking?

A. Smokers, yes. Smokers who were already smoking.

Q. There was never any thought given that low yield cigarettes may entice non-smokers to begin smoking?

A. I don't think I said that.

Q. I'm asking.

A. Yeah, I know of no statement to that effect. I think I tried to explain this morning that the company's position, and I've heard it stated many times from people at the highest

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levels, that our goal is to get smokers who have chosen to smoke and at the present time choose someone else's, another company's cigarette, to smoke one of our cigarettes by making a better cigarette that they find more acceptable.

Q. In terms of studies that you've undertaken with respect to low yield cigarettes versus -- and I don't want to call them high yield cigarettes -- what's a better word than "low yield"?

A. Higher yield cigarettes.

Q. Have you done a comparison to determine if, after a certain amount of time, the low yield cigarette smokers and the high yield cigarette smokers are essentially taking in the same amount of nicotine or a range of the same amount of nicotine?

A. Probably the closest experiments to that kind of situation would be some of the work we've done for Premier and Eclipse.

Q. Premier and Eclipse are truly low yield cigarettes?

A. Exactly.

Q. What have your results shown in terms of -- I don't want to use long range -- but other than a day of smoking. Do smokers compensate on Premier and Eclipse to take in comparable amounts of nicotine that smokers of higher yield cigarettes take in?

A. They change their puffing behaviors. The kind of studies that we've done is, we have people come in smoking their usual brand of cigarettes. We measure things like puff profile and take blood samples to monitor what's absorbed from the cigarette in the form of nicotine and CO, COHB measures in the blood.

MR. SHELLER: Could you speak up?

THE WITNESS: And we then switch them to, in recent days, Eclipse cigarettes. They would take that home sometimes for two to three weeks, we hope smoking those exclusively, that's the goal, and then come back and measure similar, similar kinds of end points.

What we found is that puffing behaviors differ quite dramatically on Eclipse and Premier type cigarettes. That's not surprising. They don't burn tobacco and they're heating the carbon fuel source. So the puffing changes. The smoke yields seem to be -- the sensory experience is very different if you ask people to monitor -- I'm sorry, if you ask people to rate what we call the attributes of the cigarettes, seem to be different. They seem to get similar levels of carbon monoxide and nicotine in the blood measures that we make.

Q. So then without being scientifically precise about this, isn't it a fair statement to say that if you put a group of people smoking Premier and Eclipse in a room and a group of people smoking a higher yield cigarette, that over time you would see similar ranges of both carbon monoxide and nicotine in their systems?

MS. McDOLE: I think that's an

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overgeneralization of what he said.
BY MR. MAISTROS:
Q. Tell me if it's an overgeneralization.
A. Obviously we would never do the study you described. What we see is, when we do, when we compare -- and I'm not sure that that's the best comparison that you've described -- this comparison is I think the way we do it, where you switch a person to a cigarette, and what you see is, yes, you see a very wide range of nicotine absorbed, you see a very wide range of CO absorbed. There's a lot of overlap and in general mean values are similar.
Q. I'm not trying to pin you down scientifically. I just want to arrive at something you and I can agree on; and that is, that if you take the low yield smoker and the higher yield smoker, that eventually you'll see a correlation of close proximity in the nicotine yields of those two over time, where the low yield smoker will compensate in some fashion and get back to a higher nicotine intake?
MS. McDOLE: Well, objection to the form of the question. I mean, I think your casual approach toward the science here may be what suits you but doesn't fit for this particular witness.
MR. MAISTROS: Do you understand my question before your attorney's commentary?
MS. McDOLE: Objection to the overgeneralization and mischaracterization of his testimony.
MR. MAISTROS: Okay, I'm not characterizing anything. I'm asking you a question.
THE WITNESS: I don't really understand the question. We do not, have not done that study that you described. I can tell you work that we have done generally looking at -- in a paper that we've published where you look at FTC yields of cigarettes versus measurements of smoke, components absorbed, and there does seem to be a positive going correlation there between FTC yields and, for instance -- in the blood is a study that we've published reviewing a group of studies. It's a positive going slope, it's a significant slope, it's not one-to-one, but it does indicate that in large populations of people, it seems that people who smoke lower yield cigarettes do seem to consume less tar and nicotine than smokers of high yield cigarettes.
That's if I understood your question, I think that's a more relevant type of study.
Q. What's the title of that paper?
A. I don't recall right offhand.
Q. Have you done any similar research where you've actually gotten results, but the results were not published?
A. Have I ever done research that was not published? Yes.
Q. Yes. What type of research?
A. Product comparison research.

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Q. Such as what?
A. Looking at new prototypes of cigarettes, perhaps. That would be, I think, proprietary.
Q. Are you working on any now?
A. I would consider the work we're doing on Eclipse now proprietary.
Q. Is there any other cigarette out there that you're working on as a prototype?
A. Not in my laboratory, no.
Q. Any other laboratory you're aware of?
A. Not specifically. You would be best to ask Dr. deBethizy that, I think.
Q. Are you aware of any?
A. I mean, there are other laboratories. I don't always know what they're doing.
Q. Are you aware of a newer type cigarette being marketed in Oklahoma?
A. Newer type cigarette in Oklahoma?
Q. Yes.
A. Winston?
Q. I don't know.
MR. SHELLER: Winston Select.
THE WITNESS: Winston Select. There was a market in Oklahoma.
BY MR. MAISTROS:
Q. What happened to that?
A. I don't know the results of that.
Q. What was your involvement in that?
A. We looked at, I think, some prototypes that led to the development of that cigarette.
Q. How was that cigarette different than your mainstream cigarette?
A. I don't know precisely. My understanding was it had a different filter, something in the filter that specifically removed gas phase components, certain kinds of gas phase components. But again, I think Dr. deBethizy would better know that.
Q. You don't know what gas phase components?
A. I don't know precisely which ones were eliminated, which ones were -- I've seen a presentation on it, but I don't know --
Q. Do you know what --
A. -- what components were reduced by how much.
Q. Do you know what nitrosamines are?
A. I've heard of them, yes. I don't know what they are as a chemical. I'm not a chemist.
Q. What's in the cigarettes that your company sells?
A. Tobacco.
Q. What else?
A. I don't know the formulations for any of the, what they call, top dressings or casings.
Q. Do you know what additives are in the cigarettes your company sells?
A. Not specifically, no.
Q. Do you know what flavorants are used in the cigarettes you sell?
A. I know there's things like -- let me say I've heard people say there are things like cocoa,

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licorice, chocolate, things like that. I don't know all the flavorings, no.

Q. When you test your subjects in your laboratory, do you know what additives are in the cigarettes?

A. No. Very often we just use commercially-available cigarettes, or we use prototype cigarettes that have been reviewed by scientific and regulatory affairs people.

Q. What is a prototype cigarette?

A. A new cigarette.

Q. Like Premier?

A. That would be -- Premier would be a very different prototype cigarette. If you change the filter on a cigarette, that might be a prototype cigarette. It wouldn't have to be as dramatic a change as the Premier or heating tobacco as opposed to burning tobacco.

Q. Have you done studies where you give people things like cocoa or other chemicals just to see what their effect could be in comparison to smoking?

A. Could you ask that again?

Q. You've done studies, have you not, where you compare cigarette smoking to caffeine intake?

A. We have -- we did a study with looking at the interactions of caffeine and cigarette smoking, yes.

Q. And I think you testified earlier even that there was a similarity between the effect of caffeine and tobacco more so than tobacco and cocaine, for example?

A. I think, yes. I think if you were going to look at the -- particularly the behavioral aspects, behavioral effects of caffeine, it is much closer to things like nicotine than it is to -- that's something I've talked about at conferences, trying to talk about this continuum of behaviors, where I think you can ingest the very many things that have potential to affect your behavior, and what's important is the ultimate effect on behavior. And in that regard, nicotine and caffeine would be closely aligned at one end; and things like heroin and cocaine are at the other end of the continuum.

Q. Why are nicotine and caffeine closely aligned?

A. I think, as I said, the behavioral effects. I think particularly if you look at the work of Professor Heinmarch in England, you'll see that he plots sort of a mental performance and simple motor performance in a little X-Y plot, and what you find is nicotine and caffeine seem to fall reasonably close together separated -- in the plus category separated from many of these other things.

Q. Where does marijuana fit this spectrum?

A. I think marijuana would definitely result in diminished performance, mental and motor, is my understanding.

Q. The word you used was "continuum."

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Are you suggesting that nicotine and caffeine would be at one end, cocaine would be at the other?
A. Yeah. I don't know that I can give you, you know, preciseness, but that's the point. There's a continuum of behavior, yes.
Q. And where would --
A. They are fairly widely separated.
Q. Where would marijuana fall on that continuum?
A. I think closer to alcohol and cocaine, certainly, than nicotine and caffeine.
MR. MAISTROS: Why don't we take a little break, if nobody minds.
VIDEOGRAPHER: We're going off the record at 2:16 p.m.
(Recess taken at this time.)
VIDEOGRAPHER: We're going back on the record at 2:55 p.m.
EXAMINATION BY COUNSEL FOR PLAINTIFFS
BY MR. SHELLER:
Q. Doctor, I'm going to ask you a few questions. My name is Steve Sheller, and just to go back to what you were saying about caffeine and nicotine and cocaine and heroin.
Are you familiar with any literature that has compared the ability of a smoker to stop smoking as compared to, for example, stop using cocaine?
A. I've seen reports in the newspapers. I haven't read any scientific manuscripts that I can remember at the moment.
Q. Well, you have made a statement on the record that somehow or another cocaine and nicotine are different, and nicotine is more like caffeine?
A. I think I said that. If you look at the over all behavioral effects of these substances, I think -- and I've tried to address a continuum of behavioral effects -- that yes, the behavioral effects of nicotine and caffeine are much more different, much different from things like heroin and cocaine.
Q. You're talking about the behavioral effects then?
A. The behavioral effects, yes.
Q. So you mean when you use the comparison, what behavioral effects exactly are you talking about?
A. What I've outlined, I think in great detail in, for example, in my manuscript, the role of nicotine and tobacco use, the effects on performance, judgment, thinking, social interactions, what we've termed the behavioral intoxication of what I would call addicting drugs versus things like nicotine and caffeine or what WHO would call the psychotoxic effect.
Q. The psychotoxic effect of the chemical?
A. That's what WHO refers to, right.
Q. So if you combined nicotine with the rest of the product it's with, are you aware of any comparison of the toxic effects of the

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tobacco product with the nicotine as compared to, say, cocaine or heroin?
A. I'm not sure I understand what your -- combined with the rest --
Q. Well, nicotine is part of a product, tobacco, right, a cigarette, in your case, in RJR's case?
A. There is nicotine, tobacco and nicotine is absorbed during smoking.
Q. And you're talking about nicotine as an individualized product, chemical or drug, if you will, when you're comparing it to caffeine. But I would like to know if you've done any analysis of the toxic effects of the product that nicotine is in RJR's product of cigarettes as compared to cocaine. Have you done any analysis as to which is more toxic?
MS. McDOLE: Objection to the form of the question.
A. Yeah, that's a complex question. I think you also had a couple of statements in there. If you're asking about the toxicity of cigarette smoke, I think there are people that are more qualified than I that you've talked to, or will be talking to, who can answer those questions. Again, I would go to Dr. Benowitz's statements at the DAC commission that says --
Q. Well, --
MS. McDOLE: Let him finish.
A. -- relative to the effects of nicotine, the real concern --
Q. I'm not asking --
MS. McDOLE: Let him finish.
MR. SHELLER: He's not answering my question.
MS. McDOLE: Fine. You can make the appropriate objection.
MR. SHELLER: The objection is: Answer my question.
MS. McDOLE: Fine. Go ahead, continue with your answer, Doctor.
BY MR. SHELLER:
Q. You repeated this answer four times now. I am not asking you about Dr. Benowitz. I'm asking you about the toxic effects of nicotine in the product in which you sell it.
MS. McDOLE: Dr. Robinson, you are allowed to finish your answer. If he doesn't like your answer, he can make an objection and -- excuse me -- he can move to strike. He can go in front of the judge, but you're entitled to give your answer.
MR. SHELLER: This is the last time to mention Benowitz on that same answer. Go ahead and finish it.
MS. McDOLE: You can answer it any way you want.
MR. SHELLER: You can finish the Benowitz story. I heard it four times.
MS. McDOLE: Great. Would you like to hear the question?
THE WITNESS: My suggestion there is, that's my answer, if--

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MR. SHELLER: We'll call it "the Benowitz story."
MS. McDOLE: No, we won't call it "the Benowitz story."
BY MR. SHELLER:
Q. Now tell me -- so you don't know what the overall toxic effects are of nicotine combined with the cigarettes as compared to cocaine or heroin; is that true?
MS. McDOLE: Objection. Objection to form of the question.
A. I don't.
Q. I am just asking; yes or no.
A. No, I don't understand the overall toxic effects. My impression is, based on comments by Dr. Benowitz, based on comments in the ADA Surgeon General's Report, that the overall toxicity of nicotine is not of serious concern to them. That's my impression.
Q. I understand. Nicotine, in and of itself; is that correct? Now we're comparing it to coffee and caffeine; is that correct?
A. That would be of nicotine.
Q. Right. Do you know if coffee increases my risk of cancer by 16 times of the lung, in itself?
A. I don't know that, no.
Q. But you do know that with cigarettes, that that will increase my risk of getting cancer of the lung approximately 16 times, don't you?
A. I don't know what the numbers are. I know there's risks for lung cancer with smoking. And as I -- if I understand what you're asking now, as I've tried to describe in my papers, those risks have principally been ascribed to tar fraction of the smoke and not associated with the nicotine.
Q. You also know that I have an ability to drink decaffeinated coffee and caffeinated coffee; is that correct?
A. They're both -- yes.
Q. And do you know how well decaffeinated coffee does on the market?
A. I do not know, no. I personally don't drink it. I only drink caffeinated coffee.
Q. You only drink caffeinated coffee?
A. Yes.
Q. Do you know if you have ever made any attempt to study RJR's products, from your expertise, to determine if the same tar levels were used in their cigarettes, but you simply removed the nicotine, whether that would be appealing to your customers?
MS. McDOLE: Objection. Asked and answered. We've gone through this already. Go ahead.
MR. SHELLER: He's never answered that.
MS. McDOLE: Well,-- he's answered.
BY MR. SHELLER:
Q. Have you done any studies on that?
A. We've done studies. We did one study that we published a presentation in Montreal in 1994 on

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holding tar levels constant and varying nicotine yields across those constant tar levels.

Q. And it didn't -- the people didn't smoke it? What did you find?

A. They smoked it in the laboratory. That there were differences. The -- we could not separate -- we were trying to look at, again, what role nicotine might play, what role sensory aspects might play in this, in the acceptance of these cigarettes to people, as one thing, as well as looking at some physiological responses.

We found that there were differences in acceptance. We could not differentiate the importance of what we were -- what we assumed to be pharmacological effects of nicotine based on blood levels versus the sensory scores that the subjects gave us. They both seemed to be equally important in determining subject acceptance, and we presented those data to the Montreal.

Q. The nicotine and the tar levels combined, so without the --

A. Well, yeah, it's hard to separate them. Because you have, you know, these are very stringently-designed research laboratory test cigarettes. On the commercial market, the tar and nicotine co-vary quite highly.

Q. I understand. Are you saying then that if you just kept the tar levels the same in your cigarettes but didn't have nicotine in it, the people wouldn't smoke them; is that what your studies show, didn't like the cigarettes?

A. No, I don't think I know the answer to that.

Q. You don't know the answer?

A. No, I don't think anyone does. If you look at the proposal again, at the DAC Commission of Benowitz and Hennyfield, they say they don't know what would happen if you took the nicotine out and just made high tar cigarettes or tar-producing cigarettes. Now the --

Q. Well, let me --

MS. McDOLE: Let him finish.

MR. SHELLER: He's answered the question.

MS. McDOLE: Let him finish his answer.

MR. SHELLER: He is not answering my question.

MS. McDOLE: I don't care. You can make your motion. Go ahead, Dr. Robinson.

MR. SHELLER: We're not going to be here --

MS. McDOLE: Then we're just going to leave right now.

MR. SHELLER: Fine, but I want him to finish my questions.

MS. McDOLE: Let him finish his answers, and you can make the appropriate motion.

MR. SHELLER: Fine. Answer your question. Your question.

THE WITNESS: I think if you look at the experience of the Next and the Merit Free

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cigarettes, that given a choice, people prefer nicotine-containing cigarettes.
BY MR. SHELLER:
Q. Well, are Next and Merit Free low-tar cigarettes?
A. They were medium full flavor low-tar, I think.
Q. Low tar?
A. Not ultra low but --
Q. Quite low?
A. Six, seven, eight milligrams of tar.
MS. McDOLE: All right. Stop. Wait a minute. You are constantly interrupting him. Let him state his sentence.
MR. SHELLER: Final.
MS. McDOLE: No, I'm not kidding Steve. Do it again, we're going to leave, at least as far as you're concerned. And if Jack wants to come back and ask questions, he can. But this gentleman is entitled, as a witness, to make his answers to your questions, and you don't have to intersperse your own little additions or interjections into his answer every couple of words. Now, let him give an answer.
If you don't like it, you can move to strike. If you want to ask him a follow-up question on anything he says, be my guest. But stop interrupting him.
MR. SHELLER: On one condition, that he answers my questions.
MS. McDOLE: He'll give you the answer. He's not being coached. He is giving you his answer.
BY MR. SHELLER:
Q. So the Next and Merit cigarettes were seven or eight milligrams of tar?
A. They came in a couple of varieties. The ones we tested, I believe, were in six, six to eight milligrams, somewhere in that range.
Q. Can I ask you why, in your area here at RJR, you have never tested cigarettes to determine whether or not they would be acceptable at 15 milligrams of tar, which is the approximate tar level of your Winston and Salems, without nicotine?
A. First off, I don't know that we would have the ability to make a cigarette like that with 15 milligrams of tar and remove all the nicotine. We have tested, as I said, we tried to test cigarettes in that study that we presented at the Montreal symposium. Those cigarettes were in the eight to ten milligram tar range. We actually tried to make a zero next to no nicotine cigarette. We found, I think, that the Merit Free cigarette was -- gave a lower yield. So I think if I remember right we ended up using that one in the study.
Q. Well, you do agree -- you don't know then whether you can remove almost all the nicotine from your products?
A. I don't know if that's technologically -- how close to zero you can get. I don't know.
Q. Have you ever asked anybody?

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A. No, I don't think I have.
Q. So you've been here since 1981; is that correct?
A. That's correct.
Q. And during that period of time you've never --
A. I've been at RJ Reynolds since 1981.
Q. Right. You've never asked or been asked to do a study to find out if a cigarette with -- I'll call it medium tar levels, would that be about 15 milligrams?
A. Medium tar. I would consider medium tar ten to twelve perhaps. Yeah, 15 is a sort of -- 15 is sort of at the upper end of the range.
Q. Between 10 and up to 15, and you've never been asked to study your product to find out if it would be acceptable if nicotine was reduced to the minimum level possible with those tar levels?
MS. McDOLE: Well, that assumes that that's his area in the first place. Objection to the form.
A. I don't recall doing any study like that, other than the one I tried to describe, where I think those cigarettes we were shooting for was sort of the target of ten milligrams of tar. And we had tried to get equally-spaced nicotine yields for those test cigarettes.
Q. Going back to the caffeine issue. The caffeine that you're comparing your nicotine to is caffeine that we drink; is that correct?
A. Caffeine in coffee. There's caffeine in some foods.
Q. But we don't --
A. Chocolate bars.
Q. We don't breathe it in the lungs or anything like that, like cigarette smoke, do we?
A. That's correct.
Q. Is there any caffeine in your cigarettes?
A. Not that I'm aware of.
Q. Do you add cocoa?
A. I believe I've heard cocoa. Well, if there's caffeine in the cocoa, there may be. I don't know.
Q. Do you know what the effect of burning cocoa might be on the effect of caffeine going into the body?
A. No, that's something I think you should ask the scientific regulatory affairs people.
Q. The studies that you've done to interpret the good part, as you say, or as I interpret your statements, of smoking, increase in certain performance levels, do you do anything to determine whether it's the caffeine portion of the cigarette versus the nicotine or any other element in the cigarette that's enhancing those performance values?
A. Okay, in the performance and the positive aspects performance testing that we do, we've looked at cigarette smoking. I'm not aware of caffeine in cigarette smoke. I don't know if the cigarettes we test have cocoa or would have

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caffeine in the smoke. That again, you should ask somebody in scientific and regulatory affairs if that's possible.

Q. You're not aware then of what it is in the smoke or the cigarette that's enhancing these performance values?

A. Well, again, we have hypothesized that these changes, positive, small, but positive changes in attention, memory, et cetera, we've hypothesized that is related to the nicotine, and that is partly because of work such as the Merit Free, Merit study that we've talked about previously, and partly because you can replicate some of these effects in non-smokers given nicotine gum, nicotine tablets. And we have not done those studies. Again, I tried to differentiate our laboratory work in comparing it to other laboratories, other scientists, et cetera.

Q. You say the work you're doing at Bowman Gray Medical School with nicotine gum, are you finding that that enhances performance?

A. That study is ongoing right now. We don't have any results to speak of. I mean that's testing subjects.

Q. Do you know whether nicotine patches or nicotine gum enhance performance in these areas?

A. There have been reports in the literature. The ones I'm familiar with are the gum, gum reports. And even in non-smokers. Now there have been other reports that say it deters performance in non-smokers. Some of the people at NIDA. But I think, my opinion on those studies is, they took non-smokers and in some instances gave them eight milligrams of nicotine gum, which is four times the two-milligram gum that smokers use, or were used to be prescribed in smoking cessation. Eight milligrams of gum in a non-smoker I don't think is a relevant experimental protocol.

Q. Have you done any experimental work to determine what percentage of smokers who try to stop can effectively stop smoking?

A. I have not done a lot of research. I have read the literature. My impression from the literature is that everyone can stop smoking.

Q. Did you -- can everyone stop cocaine?

A. I think everyone can.

Q. Can everyone stop heroin?

A. Sure.

Q. Can everyone stop alcohol?

A. Yes, they can.

Q. Now, have you determined the comparison of the ability for one to stop smoking, and I'm talking about a regular smoker. I'm talking about somebody who smokes at least one pack a day as compared to the ability to stop cocaine use, a regular cocaine user or heroin user?

A. I have not conducted research. I read that literature. My impression is that more than 40, 45 million Americans have quit smoking. Data

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suggests over 90 percent of them without any help, counseling, any aids at all. I don't think you find that in heroin, cocaine, alcohol, so I think there's a big difference there.

Q. Well, have you done any control studies, are you aware --

A. No, I have not done any control studies.

Q. You don't think 45 million Americans use cocaine, do you?

A. I don't know.

MS. McDOLE: Objection. Objection, argumentative. I don't think that was the point.

BY MR. SHELLER:

Q. Do you know what percentage of cocaine users, regular cocaine users have tried, who have tried to stop as compared to regular cigarette smokers, have the ability to stop smoking or stop using cocaine, percentage-wise?

A. I am not sure I understand the question. I have not done any work in this area.

Q. Let's take the 45 million Americans you say have stopped smoking. Over what period of time was that?

A. Oh, I think that's over decades. My reading of the literature suggests there are now more current ex-smokers than there are smokers.

Q. What I want you to tell me is how many decades are that 45 million?

A. Oh, I don't know.

Q. Since --

A. That's a number that is I think published, well-publicized in literature. I point you to it. It's a good question. I don't know how many decades that covers.

Q. Do you know how many Americans over those decades have smoked cigarettes?

A. No, again my impression is more than 50 percent have quit.

Q. More than 50 percent?

A. 50 percent of the smokers are now ex-smokers, that's my interpretation.

Q. And do you know how the percentages break down in terms of how many smokers, in terms of how much cigarettes they use; for example, has there been any data done either by RJR, that you're familiar with, comparing smokers who have been smoking regularly, one pack, as compared to smokers who smoke one pack in recent years?

A. I don't know of any RJR data. My impression from reading the literature is that people have quit from all levels of consumption, from a few to a lot.

Q. So you would consider yourself one of those 45 million, right?

A. I smoked a long time ago. I never considered myself a smoker to any occasional smoker.

Q. Smoked more than a hundred cigarettes?

A. Smoked more than a hundred cigarettes.

Q. Do you know whether that 45 million includes you?

A. My impression is that 45 million is regular

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smokers who have smoked for some period of time, but I don't know if that's --
Q. You don't know that?
A. No.
Q. So the figure you're quoting now is pulled from the air, I would say?
MS. McDOLE: Objection to the form of the question.
A. No. I can show you the reference from the smoking cessation seminar that I went to in, I believe it was, 1994.
Q. Could you get me that reference and a copy of the article if there is such?
MS. McDOLE: Well, we'll take it under advisement. You don't have to -- we'll take care of responding.
BY MR. SHELLER:
Q. Would you -- in analyzing the information regarding your understanding of smoking cessation, have you done any work here at RJR to evaluate how to assist people who want to stop smoking in stopping smoking?
A. That's a difficult question to answer, I think, because we probably come at it from different perspective. I think, in my opinion, that the more we understand about how and why people smoke, that information could in fact -- perhaps better understanding we have of that could in fact branch out into -- if you understand I think in particular for a given smoker, if they understand why they're smoking, may in fact be very important in helping them stop smoking. So in that sense, I think understanding, understanding what these positive aspects are, understanding what Warburton refers to as a resource hypothesis, what people are using in obtaining, what are the personal benefits, if you will, of smoking, the better you understand that, the better a person might be able to quit.
Q. Well, you've been doing that work now here for 16 years; is that correct?
A. We've been doing the positive aspectnot so long but for a long time. And we've been publishing that. I mean, I think that's -- we've got quite a few publications in the record out there describing our research, describing our findings; and I think that information could serve the purpose that you described.
Q. Well, let's talk about --
A. Others might argue that.
Q. Right. The analogue that you're testing now in Edinborough, Scotland.
MS. McDOLE: This is now -- we're going to get into something that's confidential.
MR. SHELLER: Right. Keep that one, until we take it off. Sure.
MS. McDOLE: So let's go through the same procedure we went through before and start separate pages and do whatever we need to do on the tape.
(Transcript continues under separate, sealed cover.)
THE WITNESS: So we're back under

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confidentiality?
MS. McDOLE: Yes.
BY MR. SHELLER:
Q. The analogue that you're testing in Edinborough, it's similar to nicotine apparently, otherwise you wouldn't call it an analogue?
A. Somehow the structure is close enough that it's -- again, I'm not a chemist and I don't understand what would qualify -- no, that's too different to be called an analogue -- but my understanding is, yes, it's similar in some respects.
Q. And was it the purpose to use the analogue to be smoked in a cigarette?
MS. McDOLE: Objection. Asked and answered.
MR. SHELLER: I don't recall that being asked.
A. The purpose of the test in Edinborough was strictly a safety assessment.
Q. Of the chemical?
A. Of the chem --
MS. McDOLE: Let him finish.
A. Of the chemical. The purpose in developing chemicals in that -- analogues in that vein I guess, I don't know, vein, was as potential therapeutics for CNS, central nervous system, disorders such as I described previously; Alzheimer's, Parkinson's, peripheral, ulcerative colitis. There are a number of areas that have received wide attention, particularly in the last few years, in that regard. And my understanding is, no, that would not to be smoked but to be developed as a therapeutic, and certainly not added to cigarettes.
(Transcript continues in open volume of record.)
BY MR. SHELLER:
Q. Do you know of any efforts at RJR to develop an analogue of nicotine, similar to nicotine that can be smoked but would allow people the freedom or choice to -- a greater freedom of choice to stop smoking than the critics think nicotine is?
MS. McDOLE: Objection to the form of the question.
A. Maybe you could ask that -- could you take me through that again?
Q. Well --
A. Do I know of any programs?
Q. Yeah, at RJR to develop an analogue to replace nicotine or to moderate the effects of nicotine in terms of the ability and difficulty of people who want to stop smoking to stop smoking?
A. Again, my understanding of the analogues that we've looked at is not to be put in cigarettes, not to replace nicotine. Again, I think I've said that that topic has come up. For instance, at Mr. Waxman's hearing, they talked about replacing nicotine with an analogue that had less peripheral effects. I know of no plans, and certainly I know of no intention of putting analogues in tobacco, putting analogues in

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cigarettes, trying to get analogues in the smoke. The analogue program, as I understand it, is designed to look at potential therapeutic uses of these compounds as medicinal compounds.

Q. Why not?

A. Why not what?

Q. Find something to replace nicotine that doesn't create the dependency that many, the Surgeon General and the majority of the medical community, believe create dependency?

A. Well, I think I've told you my position --

Q. No, I know your position.

A. -- and how I've disagreed with that. I don't know why -- seems to me the industry is under constant criticism and attack no matter what we do. I think that to try and somehow, we'd be accused of funnying the tobacco. I don't think that would be something we would do.

Q. Wouldn't that solve the industry's major critical problem of Dr. Benowitz? Wouldn't he be happy if you developed an analogue that replaced nicotine that didn't create dependency?

MS. McDOLE: That's two questions there. And objection as to what this witness knows about what Dr. Benowitz would be happy about.

MR. SHELLER: He brought Dr. Benowitz up.

A. Again, I don't know what would make Dr. Benowitz happy.

MS. McDOLE: Then you can't answer the question, John.

BY MR. SHELLER:

Q. Wouldn't you solve the problem -- if your critics were -- wouldn't it do RJR and RJR Nabisco, wouldn't it make the management of those large corporations pleased to know that the public was no longer criticizing them because they had a dependency-creating drug in tobacco that now has been replaced?

MS. McDOLE: Objection. Objection to the loaded nature of that question. Objection to how this witness knows what everyone at RJR or RJR Nabisco is going to be happy about.

THE WITNESS: The only thing -- I don't know the answer to that. The only thing I can say is that some of our worst critics -- the problems with cigarettes, associated with cigarettes, as I've said in my papers, as I've tried to say before, Dr. Benowitz says nicotine, the intake of nicotine is not critically important compared to the health risks associated with principally the tar fraction of the cigarette smoke. Our critics attack the tar, not the nicotine for the most part.

BY MR. SHELLER:

Q. For the most part I understand and you've said that several times. And you understand that the complaint is that the nicotine prevents people from stopping their exposure to the tar because they continue to smoke. So all I'm suggesting is, wouldn't your critics stop criticizing you if you replaced the nicotine with

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an analogue that enabled people to not become dependent on your cigarettes?

MS. McDOLE: That's asking him to assume that he agrees with the dependency notion. Objection to the form of the question.

MR. SHELLER: You can answer.

THE WITNESS: I don't know what would please our critics. At times there's nothing we can do to please our critics. And I would point to the Merit Free cigarette which had no nicotine and was attacked by the health critics as containing all tar and no nicotine, and why would you make a cigarette like that?

Q. So you, at the present time, know of no effort by RJR to develop an analogue to replace nicotine in cigarettes; is that correct?

MS. McDOLE: Objection. Asked and answered several times this morning and now in your examination.

BY MR. SHELLER:

Q. Now in your comparison of caffeine and cigarettes and nicotine, have there been any studies done to compare the ability of the public to stop drinking coffee with caffeine as compared to stopping smoking?

A. I think there have. I'm not very familiar with it. I know you can join Caffeine Anonymous now out in Seattle and self-help groups for quitting coffee-drinking.

Q. Do you know the relative percentage of people who drink coffee, who have difficulty stopping drinking coffee as compared to people who smoke one pack or more of cigarettes a day for a period of time?

A. Again, I think -- I have not done any work in that area. I would report that -- I would quote Dr. Horn's report that seems to be a wide range. For some it is easy. For most, it is between easy and difficult; and only for a few is it difficult to quit smoking. The only personal experimental experience I have with people not drinking coffee is during the Premier study when we asked them not to smoke for several days, we also asked them not to drink coffee for, I think, three or four or five days. Almost to a -- people said: I can go without cigarettes longer, but I need a cup of coffee. So I think it can be difficult to stop.

I think, you know, you have to -- how you measure degree of difficulty. I mean, you have to factor in motivation, a lot of different things.

Q. Have you done any studies --

A. Very difficult to say this is easy or this is harder.

Q. Well, what studies are you doing here to determine the degrees of difficulty?

A. I don't do any -- I have not done any smoking cessation studies.

Q. Is anybody in the tobacco industry doing them?

A. I don't know if they are or not.

Q. Don't you think that's important to

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know?
A. I don't know how you would, how you would rate that. I mean there are -- there's published literature out there on difficulty of quitting smoking. Most of those studies are done with a very small percentage of the population who seek help for quitting smoking. My impression is that the majority of people who quit smoking do so on their own without help. And therefore, you know, some report, again, easy; some report difficult.
Q. You don't know the percentages or the degrees?
A. I do not. No, I don't.
Q. And the literature doesn't tell you that, does it?
A. No, because I think it's hard to measure, you know, what's easy, what's difficult.
Q. When you say "the literature," now Dr. Benowitz, has he given you any information as to the percentages and degrees of difficulty?
A. I'm not aware of his percentages.
Q. Have you asked him?
A. No, I don't think I have.
VIDEOGRAPHER: Mr. Sheller, we have five minutes left on the videotape.
Q. In terms of the degree of difficulty, has RJR made any efforts to fund outside research to determine the degree of difficulty and percentage of population able to stop and under what conditions?
A. Not that I'm aware of.
MR. SHELLER: Okay, we'll go back. Let me finish up this couple of minutes.
BY MR. SHELLER:
Q. When you do your studies on how effective cigarette smoking is to make people think better or memory and so on, have you evaluated how it affects them in terms of their overall performance; for example, if I smoke two packs of cigarettes a day versus 15 or 20, did you make any effort to compare how that affects overall performance in terms of work production for the day?
MS. McDOLE: Objection.
Q. Do you understand the question? If you want, I can clear it up.
MS. McDOLE: Objection. We went into this this morning. Answered already.
A. I think you have -- I would like to maybe disagree, if I could, with I think what your statement was; that we do studies on the effects that make people think smarter. We do studies on the effects of smoking. And in general, those studies have supported the other literature, that there are these small positive increases in performance on these very simple psychologically-based tasks. I have not done any work on whether a 15-cigarette-a-day smoker is more productive at work than a 20-cigarette-a-day smoker. I do not -- I have no information on that.
Q. I mean, I know from running my office, we have a productivity problem with people

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who smoke. They go outside the building to smoke. And have you done any analyses of how that interferes with productivity?
A. I have not done any analysis of that. It's not surprising to me that if you send people away from their desks to smoke, that they're spending less time at their desks. That seems to be a no-brainer. I mean, if you're sending people outside for fifteen minutes, they're not at their desk working. That would not be surprising to me.
Q. So then to sum up, then you've made no comparisons in terms of the effect of a two-pack, three-pack, versus fifteen-cigarettes-a-day-smoker, in terms of their ability to enhance their performance on these simple tasks that you give them?
MS. McDOLE: Objection. Asked and answered.
A. Not that I can remember, no.
MR. SHELLER: That's all.
VIDEOGRAPHER: Would you like to go off the record to change tapes? We're going off the record at 3:34.
(Recess taken at this time.)
VIDEOGRAPHER: This is tape 3 of the videotaped deposition of John Robinson, Ph.D. We're going on the record at 3:40 p.m.
CONTINUED EXAMINATION
BY MR. MAISTROS:
Q. Mr. Robinson, I'd like you to describe for me, if you could, the role of attorneys in your research at RJR?
A. I don't know that the attorneys have a role in the research. We have attorneys in R&D. They have patent attorneys. They have attorneys who do contracts for us when we do outside -- a member of the legal department reviews manuscripts that go outside along with managers, supervisors and group director. They basically -- I've described their role as legal advisors.
Q. What role do they play specifically and have they played a role in the establishment of research projects that you've been involved in?
A. In the establishment, I don't think I can point to a project that they are involved in the establishment of.
Q. Have you established written protocols for certain research projects?
A. In my group we typically don't have research protocols, per se. We have the document that we submit to the Human Research Review Committee which is approved, and that sort of serves as the protocol, if you will, for our studies.
Q. Has there ever been an occasion where attorneys have been involved in approving or reviewing a request for a certain research project?
A. There's a legal representative on the Human Research Review Committee.
Q. And has he commented on things, other than the ethics of a particular project

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vis-a-vis human test subjects, if you will?
MS. McDOLE: Objection to the sexist nature of that question.
A. I was going to say the representative now is a woman.
Q. All my questions are "he" but also "she."
A. Have they made comments? They make a lot of comments. They ask questions. They make comments. Have they ever made a specific comment regarding -- could you ask that again?
Q. You said there was an attorney on the Human Research Ethics Committee, I believe you called it?
A. Review Committee.
Q. Review Committee. What is their role?
A. To serve as legal advisor to the committee.
Q. But the Human Research Committee, isn't the role of that committee just to determine whether or not a particular -- let's start over. The Human Research Committee just reviews human testing projects, does it not?
A. Yes.
Q. And that committee comments generally upon the ethics of a particular test on humans?
A. Ensure the ethical treatment of humans, protocol, et cetera, consent forms, things like that.
Q. Is there a clearing house, if you will, that I could go to, to determine what requests for human testing have been made at RJR?
A. Is there a clearing house? I don't know.
Q. Is there some library or file I could go to to determine all the different requests that have gone in for human testing?
A. I don't know if the chairman keeps a record or not. There's no library that I know of.
Q. For example, when you started in '81, were you curious as to what testing had come before you?
A. Again, I think as I said this morning, my impression was that Dr. Gilbert preceded me by about a year or so. My impression was that was the only kinds of testing in psychophysiology that occurred prior to my joining since that new group had been formed in the year or so earlier.
Q. Have you done any long-range testing of human behavior related to smoking?
A. You'd have to -- long range?
Q. Any studies that go on for like more than a year?
A. I have not participated in any studies, no.
Q. What's the longest period you've ever studied?
A. Well, a single study, that may -- well, may have been -- possibly the Premier study, six, eight weeks with a given one type of cigarette was probably the longest.
Q. In all the studies that you've undertaken since 1980, have any of your studies led to the conclusion that there are adverse

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effects related to smoking?
A. We have not -- again, we have looked at the psychophysiology of human performance related to smoking. We published our results. We looked at heart rate increases, blood pressure changes, skin temperature changes, things like this. Some people might point to those as adverse effects. We published the data in that area. My lab has stuck pretty much in human performance testing.

If you ask Dr. deBethizy, he can perhaps tell you about some of the other studies done on cigarettes, particularly in comparison to Premier and Eclipse, that I think people would point to as adverse effects, have pointed to as adverse effects in literature.

Q. You mentioned heart rate, blood pressure, skin temperature. Are you, in answering my question, assuming that those are adverse effects?
A. No. I'm saying I think some people might point to those as -- I report them simply as the effects of our study, the changes that occurred. And again, we do the test, we report the data. I think there might be some people who might consider those adverse.

Q. How many studies do you think you've done since 1981?
A. Dozens. I don't know the number.

Q. And out of those dozens of studies, is it your testimony here today that none of them, either accidentally or intentionally, have resulted in findings that there are adverse effects related to smoking?
A. Oh, I think if you look at the work we've just recently presented on Eclipse where people smoking their usual brands, switching to Eclipse, on average they had slightly higher carboxyhemoglobin levels in their blood. Some people at the Duke conference reported to that as the potential adverse effect. I don't know if it is or not. I think the feeling was pretty well expressed, even by some of our most severe critics, that these were somewhat -- levels were somewhat higher and would require perhaps more testing to understand if there were any adverse effects.

Q. Any other research you've done which has resulted in what could be interpreted as adverse effects of smoking?
A. Again, I think it depends on your point of view. I think there are people who would point to some of our data and say that shows an adverse effect, be it, you know, heart rate, blood pressure, EEG changes. I think it depends on your point of view.

Q. I'm not referring to just published papers either. I'm talking about any research that you were involved in or are aware of at RJR which resulted in conclusions that there were adverse effects related to smoking.
A. Again, some of the data on carboxyhemoglobin people would point to as adverse effects. Data generated outside of my group by

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the, for instance, the toxicology group, Premier and Eclipse, comparisons of tobacco-burning cigarettes, some people would point to that as adverse effects. The genetic toxicology studies.
Q. Where does determining the toxicology of smoking cigarettes rank in terms of importance at RJR?
A. I think I can only give you my perspective. I think that's a very high priority from my perspective. Dr. deBethizy could answer that, perhaps.
Q. And --
A. I think for the --
Q. -- for the layperson "toxicology" means what?
MS. McDOLE: Did you have something else?
MR. MAISTROS: You can finish it, before we move on.
A. Toxic effects. Toxic effects?
Q. Poison?
A. I think if you -- well, again, there's a well-known principle in toxicology: Poison is in the dose. I think if you look at the history -- and really Dr. Townsend I think would do a much better job at this -- if you look at the history of product development at RJR, you will see a very, I think, very clear record of research into allegations, claims, about the toxic effects of cigarette smoke and attempts to respond to those claims.
Q. And who's been doing that?
A. I think that's been over a wide range of groups for a number of years.
Q. But not behavioral?
MS. McDOLE: The toxicology?
MR. MAISTROS: Responding to claims of adverse effects.
MS. McDOLE: All right, that's a different question.
THE WITNESS: Okay, now I am confused.
BY MR. MAISTROS:
Q. You were saying that there's been a -- started out talking about Dr. Townsend saying there's been a --
A. If you look at product development.
Q. -- an appropriate response. You haven't been involved in any of that, have you?
A. Well, I think if you look at Premier and Eclipse as two very key examples of attempts to respond to the criticisms in the literature of cigarettes and cigarette smoke, yes, I have been involved in those.
Q. And so it's your understanding that Premier and Eclipse were developed to respond to what criticisms?
A. I think Premier, especially where eliminate tar -- where Premier eliminated tar from cigarette smoke, again this goes back to the calls from government bodies, independent researchers to reduce or eliminate tar in cigarettes and maintain nicotine, to make acceptable cigarettes. And take

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that not as far with Eclipse where you've significantly reduced the tar-to-nicotine ratio. These are attempts to respond, I think, to criticisms and calls really for product development in those areas.

Q. Who has called for a product that eliminates tar but maintains nicotine?

A. I'd say the biggest proponent of that is Professor Russell in England and the Froggat Committee, Froggat Committee that we spoke of this morning. That's a fairly well-publicized view in many countries outside the United States.

Q. Of the need to eliminate tar yet maintain nicotine?

A. Reduce tar, maintain nicotine cigarettes.

Q. And why maintain nicotine? Why is that important?

A. I think certainly Professor Russell would say that's why people smoke. Now I disagreed with him on that as the only reason people smoke. For the role that nicotine does play in smoking, I think it's important that nicotine be present, and I think I've outlined that role, tried to outline that role very clearly in my publications.

Q. Has marketing taken any of your behavioral findings with respect to improved performance and used them in their marketing?

A. No, not that I'm aware of.

Q. Have you advised marketing of your results?

A. We certainly publish our data. I've had -- some of the data was covered in the company newspaper. I've made presentations where marketing was present. I have not made any presentations in an attempt to get them to use my data as marketing slogans or anything.

Q. Do you copy marketing with some of your results of your behavioral science testing?

A. Typically I would not, no.

Q. Do you have meetings with marketing?

A. I've been in meetings with marketing. Typically, no.

Q. How about new products? Do you circulate your data and results to new products?

A. We present -- we will present data at seminars that are open. Typically you present your data at anyone willing to listen. I have made presentations to new product people. That's not something I do on a regular basis.

Q. Have you done any studies to determine if --

A. If I could, let me expand that last one just a little bit.

Certainly testing of things like Eclipse and Premier, those data are shared with new product people; but I interpreted your question as what we've been referring to as the positive aspects.

Q. Don't you view the public acceptance of Premier and Eclipse as a positive aspect?

A. I'm not sure I --

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Q. If Eclipse and Premier were publically-accepted products, would that be a positive aspect?
A. Not as I view the term. I think that would be a good thing for the company. That's not a positive aspect of smoking that we've talked about in terms of performance --
Q. Oh, no, no.
A. -- performance testing, et cetera.
Q. I'm sorry, I wasn't referring back to that characterization.
A. Would you like -- I'm sorry, go ahead.
Q. Why would it be a good thing for the company if Premier and Eclipse were successful?
A. I think any cigarette that we make that is successful would be good to the company, from a business standpoint.
Q. Have you ever looked at the data from the company to determine where RJR makes most of its profits, that is, low yield, high yield cigarettes?
A. I don't know those numbers, no.
Q. Never heard any rumors that certain yield cigarettes are more popular than other yield cigarettes?
A. I think from my reading I know that most of the market is FFLT smokers, a smaller percentage is full flavor smokers, and then the smallest percentage, 11, 12 percent is ULT smokers.
Q. What is an FFLT smoker?
A. Full flavor, low tar. That's how I refer to them. I don't know that there's a fixed delineation. I typically -- that's about 6 to 12 milligrams of tar is my understanding.
Q. And what was the other initials you used?
A. FF, full flavor. That would be above 12 milligrams, and is my understanding; and ULT, ultra low tar, less than 6 milligrams: Again, I don't know that there's any firm standardized delineation of those. That's my understanding of those.
Q. You're not aware of studies published either by your company or FTC or anyone else that publishes on an annual basis the sales of different yields of cigarettes?
A. Maxwell Report comes out every year I think.
Q. What's the Maxwell Report?
A. That's where they report the percentage of market for each -- my understanding is it's a marketing, percentage of market share for all the brands sold.
Q. What's the highest-selling cigarette in terms of gross sales that RJR makes?
A. I don't know the answer to that.
Q. Well, when you do your research on how and why people smoke, don't you take into consideration the different brands that they smoke?
A. Well, yes, we often ask them what brands they smoke.

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Q. Did you ever try to figure out why they smoke Camel as opposed to some other brand?
A. Yes, that's part of what we do. Why do they choose the particular brand they choose over another brand? That is of interest, yes.
Q. You've never done a test to determine why they smoke the most popular RJR brand over another brand?
A. Typically more interested in getting to understand why Marlboro smokers like their Marlboro better than they like our cigarettes.
Q. So is it your testimony that you've never actually run a test to determine why it is that people smoke your most popular cigarette and they don't smoke your least popular cigarette?
A. I guess my answer is yes. I don't know of any study done with that end point in mind.
Q. Why do you say Marlboro?
A. My understanding, Marlboro is the largest, single-selling cigarette in the United States, Marlboro family.
Q. And who makes that?
A. Phillip Morris.
Q. And you know that Marlboro is the most popular Phillip Morris cigarette, and you don't know what the most popular RJR cigarette is?
A. I know that because Phillip Morris' Marlboro is the most popular cigarette in the world. I think that's common knowledge. I don't know which of our brands is the most popular, which has the largest sales. I don't know that.
Q. Have you ever done any tests just on Marlboro to determine why people smoke Marlboro as opposed to other cigarettes?
A. We've done testing on Marlboro cigarettes. We have done profiling on Marlboros.
Q. Have you come to any conclusions why people select Marlboros over any other cigarettes?
A. Nothing I can point to concrete. It seems to be a very good cigarette. I've not discovered the secret as to why it's such a good cigarette.
Q. Is there any research to determine what additives are in Marlboro?
A. I think -- not by my group. There's been research into what makes a Marlboro a Marlboro.
Q. Who would have done that?
A. Oh, I think that's been over time a lot of people looking at the chemistry, looking at the tobacco, trying to determine perhaps differences in their tobacco chemistry and our tobacco chemistry.
MS. McDOLE: Excuse me. It just occurred to me that we never gave the court reporter or the videographer the cut-off point for the last declaration.
MR. SHELLER: You're right. It's when we stopped talking about whatever --
MS. McDOLE: I think we probably need to go back. It certainly was before the break. We were talking about analogues so I think what we need to do -- and I am sorry for the interruption. We had -- when you were out of the

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room, we had declared another confidential segment of deposition and never indicated. So I think if you want to call me at some point, I think we can probably --

MS. McDOLE: We can either do it later on today or first thing tomorrow and determine where that was.

BY MR. MAISTROS:

Q. Did you ever do any studies that correlated the success or popularity of Marlboro with its nicotine content or yield?

A. Not that I would characterize that way. We've done studies with Marlboro trying to look at puff profiles. We've looked at serum nicotine levels. Haven't found anything unusual different there that, again, I don't know what the secret is. I can't point to a concrete: Boy, if we did something like this, we would make a cigarette like Marlboro.

Q. In any of your studies have you looked at the effect that advertising has on a smoker's choice?

A. I have not looked at anything in advertising research-wise. I've seen some reports in the literature, in the public literature.

Q. Do you, as you sit here today, have any hypothesis as to why a Marlboro is more successful than some other brands?

A. I could form a hypothesis. And, as I said, I guess my hypothesis it's a very good cigarette. My overall hypothesis I think as to why people choose a particular brand would apply to Marlboro also. There's something that they like about the way the cigarette smokes and tastes. I think those are the two, what smokers often refer to as, the draw characteristics, the ease or difficulty in puffing, as well as the sensory aspects of the smoking. I think those are the prime players in choosing a particular brand.

I've said in different venues, I think there's over 1300 brands out on the market in the United States alone, brand styles, okay. Because you may have a Marlboro, Marlboro Light, and Marlboro Medium, all different kinds of Marlboro. People choose their cigarette because of the sensory properties of the smoking qualities. All of those cigarettes contain nicotine. I think this is one of the arguments I've presented, that smoking is not just nicotine because people choose a particular brand because of the taste. There's nicotine available in all those cigarettes, and yet somebody's smoking all those cigarettes or they wouldn't be on the market.

Q. The studies that you have done, is it relevant to your studies the age of the human participants?

A. Typically in our studies we generally recruit people 21- to 35-years-old.

Q. Why is that?

A. Mostly for convenience. We have done studies with older people. I can't think of a -- I can't think of a study where we specifically

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tried to compare older people to younger people. Certainly not in our laboratory.

Q. And --

A. Although I think there would be some interesting research that could be done there.

Q. And do you consider the weight of the people?

A. Typically when we recruit people for particularly studies when we are going to take blood samples, we ask that they be of average height and weight or average weight for their height. Otherwise, if they come into the laboratory and if they were, for instance, excessively overweight, we might not be able to get the blood sample easily and we would, you know, wouldn't be able to participate. So we do do that. We do record their height and weight on the -- we weigh them when they come in. We do record their height and weight.

Q. Do you take into consideration their sex?

A. Yes, on the form it's male or female. A vast majority of our work has been done with males, but we have done some work with females.

Q. Have you noticed any differences in your results between males and females?

A. Nothing that I can think of, right offhand. Most of the psychophysiology studies I think are done again with males to try and get a homogeneous population. Some of the work on Premier and Eclipse, et cetera, have used females other than perhaps, other than normal differences if you measure, for instance, hematocrit in a male and hematocrit in a female. I haven't noticed anything extraordinary.

Q. Why are most of your test subjects caucasian?

A. Again, simply to produce the most homogenous population as possible. We have tested non-caucasians.

Q. Did you see any variations in the performance results for non-caucasians?

A. I don't think we have enough of a population to make an accurate assessment of that, enough of a population of non-caucasians.

Q. What type of studies have you done to determine if there's any correlation between your enhancement results, if you will, or positive effect results, and variation between different age groups, sexes, races?

A. I don't think we have enough female, blacks, that are non-caucasians to make that kind of assessment. We simply haven't a large enough population.

Q. Are you currently now doing any studies to determine further the reasons behind these slight increase in memory, et cetera?

A. Well, we have work ongoing in this area, yes, as I described.

Q. What is your current work attempting to focus upon?

A. Well, for instance, at the med school, at the medical school, Bowman Gray Medical School,

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which I should point out that is a laboratory that is separate. I have an adjunct appointment. There it is separate from the Reynolds laboratory. We are looking at nicotine gum and performance, its interaction with alcohol. There are hypotheses in the literature, and certainly the data suggests that people often smoke when they drink alcohol. There have been behavioral hypotheses put forth that some of these positive aspects of smoking, these performance aspects may in fact be greater or explain this increase in smoking when people are drinking. We're studying that over there.

At the lab at Reynolds, Dr. Pritchard's work is continuing to look at how cigarette smoking, smoke components absorbed from the cigarette smoke affect simple motor performance and memory recall, reaction times, things of this nature.

This is an ongoing process. It's not something you do one experiment and you have the answer. You investigate, and continue to investigate the area.

Q. At Bowman Gray Medical School laboratory, is that funded by RJR?

A. It was established with a gift from RJR, a one-time gift back in, I think, 1992 or 3. Well, I'm not sure. May have been as late as 1994.

Q. And when you say "it," is that the laboratory?

A. The laboratory.

Q. Do you know what the gift amounted to?

A. I believe it was $400,000.

Q. Was there a laboratory sitting there before '94?

A. No. We constructed the laboratory. It actually -- at the time the gift was given, the timing was somewhat delayed, in that the laboratory exists in the Department of Physiology and Pharmacology of the Bowman Gray School of Medicine where I have my adjunct appointment. The physiology and pharmacology department was in the process of moving from the main -- what's called the Hawthorne Campus, medical school campus, into a new building in the downtown area that is supposed to serve as the core for kind of a Research Triangle Park. So we had to wait while that building, as often occurs, while that building was renovated and construction delays occurred; and I guess we got started doing studies probably in mid or late 1995, would be my guess, by the time we got rolling.

Q. Are there ongoing research grants that are given to Bowman Gray?

A. We have some research grants that are funded on a yearly basis. Sometimes if money is available we like to fund projects at the universities. We think it's good for the university, it's good for our scientists. We get to interact with people outside the industry, get fresh perspectives. I think I've said before -- not today but I've said in some of my talks that

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one of the worst things that you can do as a scientist is sort of lock yourself up in a little room and not try and interact with colleagues. You can miss a lot that way.

Q. Would you know or are you a participant in any fashion at RJR in determining what grants are awarded?

A. I have funded some grants out of my budget. I have been asked to participate in discussions of, if you will, the priority of what grants might get funded, yes.

Q. What is your budget?

A. For the psychophysiology division? Right now I believe it's about $750-, $800,000, in that range.

Q. A year?

A. Yes.

Q. What is your department? You were funding these grants then out of RJR?

A. Yes. I am sorry, that budget number I gave you was psychophysiology laboratory, RJ Reynolds' psychophysiology lab. No, the medical school performance lab budget was established with a grant, with that original gift I told you. There has been -- there is no ongoing funding at that location. We're still working with the original funding.

Q. Your research activities you've described thus far today are funded out of your $800,000 a year annual budget?

A. The research activities at RJ Reynolds?

Q. Right.

A. Correct.

Q. And within that $800,000 budget you have the freedom to give grants to outside people?

A. There is a section of money. There is a project category, if you will, of contributions which typically can be gifts to universities. If we get -- typically the way it's worked in the past is if we get to the end of the year and we have not used that money for internal studies, we do again like to fund, if possible, outside universities.

Q. Do you have a written contract with RJR?

A. Not that I'm aware of. I mean, I signed some documents when I took the job. I don't consider them a contract. I don't have, for instance, a yearly contract or anything that I would consider a contract.

Q. Do you have a non-compete?

A. I do not.

Q. Did you sign a confidentiality agreement?

A. Yes, I have.

Q. Did you assign any discoveries you might make over to RJR?

A. I think any patents -- I don't have any patents. I think any patents that I would develop they do, I think, have ownership of. I do not have patents. I don't know how that works exactly.

Q. Have you ever hired anybody that

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worked at another tobacco company?
A. No, not that I'm aware of. You mean me personally you're asking?
Q. Yes.
A. Yes, not that I'm aware of.
Q. Has anyone in your department, have they or do they currently -- sorry, do any current or former employers, employees that have been in your department, have they worked at other tobacco companies?
A. Worked in psychophysiology or biobehavioral? Have they worked at other tobacco companies? Have they left and worked at other tobacco companies?
Q. No, have they worked at other companies and come to RJR?
A. Worked at other tobacco companies and come to RJR?
Q. Yes.
A. Not that I'm aware of.
Q. Have you met with people in similar positions as yourself from other tobacco companies over the years?
A. I certainly have attended tobacco company meetings such as CORESTA meetings.
Q. What is CORESTA?
A. CORESTA is -- I do not know. It's an acronym in French. I think it's C-O-R-E-S-T-A. It's an acronym for a collection of tobacco research groups' representatives from different tobacco companies. I've gone to TCRC meetings. I've printed papers and TCRC is the Tobacco Chemistry Research Conference. Presented papers.
Oh, that brings back a thought from this morning. That's another presentation that's scheduled in later this year.
Q. Where?
A. Here in Winston-Salem.
Q. TCRC?
A. Yes.
Q. Can anyone go?
A. As far as I know, if they're registered.
Q. Where is it held?
A. I don't know where it's held this year.
Q. When is it? Maybe between now and tomorrow --
A. September. I think September 17.
Q. This is a TCRC meeting?
A. TCRC.
Q. And the participants in that would be chemists from different tobacco companies?
A. Researchers, yeah. It's not -- like I say, it's not just chemists anymore.
Q. Do you have a topic selected for that meeting?
A. I'll chair a session, a symposium session. I believe it's titled "Smoke, Smokers and Smoking."
Q. What's the theme, if you will, of your presentation?
A. I'll be the chairman. I'll just be keeping people on time, hopefully.
Q. These TCRC meetings are typically

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the anti-smoking people. Do they come to those and make presentations?
A. Oh, I think Dr. Hoffman, if you would consider him an anti-smoker, has been coming for many, many years.
Q. When you make a presentation at a meeting such as that, does that have to go through legal first?
A. I wouldn't be making a presentation there. Typically presentations, manuscripts published, presented on the outside go through a publication review process. I'd be happy to describe that for you.
Typically the author gives that to two scientific colleagues in the company to review for scientific merit. Then that manager of the division of the author reviews it. It's then passed on to the legal department for review to the group director and then to Dr. Suber, vice-president.
Q. How do you spell his name?
A. S-U-B-E-R.
Q. He's vice-president of?
A. He was just promoted last week, I think. Vice-president of scientific and regulatory affairs and chief toxicologist, I believe is his title.
Q. What's Dr. deBethizy's title?
A. I believe vice-president of product evaluation.
Q. Is deBethizy involved in Winston Select?
A. Well, as a vice-president. He doesn't do any bench science. Certainly I think much of the work on, for instance, prototypes that we did was done by people under his, in his group.
Q. Do you have a list of all projects you've been involved in from '81?
A. No, I do not.
Q. Was there any document that I could go to that would tell me what you've been involved in since '81?
A. Not that I'm aware of, no.
Q. Have you ever gotten into a discussion with any of RJR's counsel that they were editing things they shouldn't have been editing out of your papers?
A. No, I have not. I've been very pleased with the interactions I've had with our legal people in that regard.
Q. Who is the person you've primarily dealt with in legal?
A. It's changed over the years. Primarily the longest person there would have been Mr. Blixt.
Q. How do you spell his name?
A. B-L-I-X-T.
Q. Anyone else?
A. He was R and D counsel for a while. Ms. Jabbour, J-A-B-B-O-U-R, I believe. Ms. Ward, W-A-R-D. And currently Mr. Johnson who is in that -- Ms. Ward is still there. Mr. Johnson has Mr. Blixt and Jabbour's old position.
Q. Were you consulted in any fashion

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with respect to the agreement that was announced a couple of weeks ago between tobacco and the Attorneys General and other parties?
A. No, I was not.
Q. Did you arrive at any conclusions with respect to that agreement?
A. I've read it.
Q. You've read the 58-page document?
A. Yes.
Q. How did it come to be that you read it?
A. I asked for a copy of it and read it.
Q. Was there anything in that document that you disagreed with?
MS. McDOLE: Objection to the breadth of that question.
THE WITNESS: If you could be more specific.
BY MR. MAISTROS:
Q. As you sit here today, is there anything you can recall that you disagreed with?
A. I don't know if "disagree" is the right word. I think there are things that I didn't understand or have trouble understanding the rationale for or the meaning of some things.
Q. Was there any portions of that agreement where the tobacco industry agreed to take certain action with respect to, for example, reducing youth smoking that you disagreed with?
A. Okay. My reading of the document is it's a proposal. It's an outline of a proposed settlement. I don't know what that's going to look like when everybody gets through with it. I can tell you that everything I've seen from my company and from the highest levels suggests that we do not want underage people to smoke, do not support underage smoking. We would work towards any program or -- well, we would work towards programs that would reduce underage smoking. We have such programs. We support such programs.
Q. When were those established?
A. I've heard about them for several years now. I don't know when they've been established.
Q. Have any of your studies in the past 16 years focused upon why underage people smoke?
A. No.
Q. Do you know what percentage of RJR smokers begin smoking when they are under the age of 21?
A. No, I don't know that. And I would just say my understanding of underage smoking is 18.
Q. I just use 21. Your test subjects, why is 21 the cutoff, or is it?
A. Typically 21 to 35. We had, years ago, tested 18-year-olds. We moved away from that, I think principally so as not to be seen as trying to push too close to that line; that we wait until 21.
Q. And none of your studies have focused then upon why people under the age of 21 begin smoking?
A. No.

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Q. How about under 18?
A. No.
MR. MAISTROS: Counsel indicated you wanted to stop today at 4:30; is that correct?
THE WITNESS: That would be great. We could go a few minutes longer.
MS. McDOLE: I don't know if we need to be on the record.
VIDEOGRAPHER: Going off the record at 4:29 p.m.
(Deposition adjourned at 4:30 p.m.)

JURAT

I, JOHN ROBINSON, Ph.D., do hereby certify that I have read the foregoing transcript of my testimony, taken on July 1, 1997, and have signed it subject to the following changes:

Page	Line	Correction

DATE:
Sworn and subscribed to before me on this day of
NOTARY PUBLIC

CERTIFICATE OF REPORTER

STATE OF NORTH CAROLINA)
COUNTY OF WAKE)

I, Jane Worthen Smith, the officer before whom the foregoing deposition was taken, do hereby certify that the witness whose testimony appears in the foregoing deposition was duly sworn by me; that the testimony of said witness was taken by me to the best of my ability and thereafter reduced to typewriting under my direction; that I am neither counsel for, related to, nor employed by any of the parties to the action in which this deposition was taken, and further that I am not a relative or employee of any attorney or counsel employed by the parties thereto, nor financially or otherwise interested in the outcome of the action.

_____
JANE WORTHEN SMITH, RMR
Registered Professional Reporter
Notary Public in and for
County of Wake
State of North Carolina
My commission expires August 6, 1997.

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